HEARING

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	
Application for	)	
Certification for the	)	Docket No. 98-AFC-4
SUNRISE COGENERATION AND	)	
POWER PROJECT (SUNRISE)	)	
_____	)	

CALIFORNIA ENERGY COMMISSION

FIRST FLOOR HEARING ROOM A

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

FRIDAY, DECEMBER 3, 1999

9:00 A.M.

Reported by:
Debi Baker
Contract No. 170-99-001

COMMITTEE MEMBERS PRESENT

Michal Moore, Presiding Member

David Rohy, Vice Chairman
Associate Member

STAFF PRESENT

Gary Fay, Hearing Officer

Bob Eller, Adviser to Vice Chairman Rohy

Shawn Pittard, Adviser to Commissioner Moore

Caryn Holmes, Senior Staff Counsel

Marc S. Pryor, Siting Project Manager

Rick Tyler

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I N D E X

P R O C E E D I N G S

9:00 a.m.

PRESIDING MEMBER MOORE: Good morning. I'm Michael Moore, Commissioner here at the California Energy Commission, Presiding Member of the Sunrise Cogeneration Project.

And we'll begin with the continuation of yesterday's evidentiary hearing. Today we'll consider the issue of the worker safety.

And, counselor, I believe you're opening.

HEARING OFFICER FAY: Thank you, Commissioner. Are there any preliminary matters this morning before we get started? Mr. Grattan?

MR. GRATTAN: Yes, on the matter of schedule. I think it appropriate maybe at this time to discuss how the Commission wants to handle the revised schedule and the request for extension, -- a revised schedule, get a revised schedule and our request for extension.

HEARING OFFICER FAY: Okay, do you want to give us your thoughts on that?

MR. GRATTAN: I would suggest that the applicant in early next week file its request for extension and file a proposed schedule. And the

parties can react to that.

HEARING OFFICER FAY: Good. Why don't we have you do that. Can you file it a week from today?

MR. GRATTAN: Yeah, we can file it a week from today. We can probably file it earlier, but that's --

HEARING OFFICER FAY: Okay, all right.

PRESIDING MEMBER MOORE: Or earlier.

(Laughter.)

HEARING OFFICER FAY: Yeah, and then we'll give the parties five working days to respond.

MR. GRATTAN: Okay, very good.

PRESIDING MEMBER MOORE: Are there other procedural matters from anyone? All right, with that, then --

HEARING OFFICER FAY: Oh, and the other thing I guess we can mention is I think we have mentioned something about the next evidentiary hearing. We don't have the notice ready to go out at this time, and the Committee is reviewing those dates.

So, don't lock yourself in until we get the notice out to you. We've had a request for a

one-week delay, which if granted, would put it in the week of January 17th through 22nd or something like that. So the Committee has that under review.

MS. HOLMES: With respect to the schedule, since that issue's come up, Mr. Fay, I talked yesterday with the representative of the San Joaquin Valley Air Pollution Control District. And he informed me that the district has issued a letter which we haven't seen yet stating that the NOV issue has been resolved. And that with respect to the appeal, the petition that CURE filed on the DOC, it was his understanding that it was their plan at this point, although it's not firm, to hear that at a board meeting in January.

So, I'm going to try to find out what the exact date of that was. I'm assuming that the Committee would like to have that hearing be concluded before it takes evidence on the DOC in its own proceeding.

So that may have an effect on which week the Committee chooses to hold the Sunrise hearings. And I will let you know as soon as I hear that.

HEARING OFFICER FAY: And the district

has not scheduled that yet, is that correct?

MS. HOLMES: The district has not scheduled that. My understanding was that the 30 days is around the end of December or the beginning of January, but they didn't think they were going to be able to meet that deadline, and so they were hoping to meet at sometime mid-January.

So, again, that may, if they schedule something for the week of -- during the 10th, 11th, 13th period when you were originally scheduling your hearings, and you could have that resolved by waiting a week, that's something you might want to take into consideration.

HEARING OFFICER FAY: Right. We also need to know if it's their intention to make a decision, or just to take evidence.

Obviously if they only take evidence and don't issue a decision we wouldn't know anything more than we know now.

MS. HOLMES: The implication from the person that I talked to was that they would be making a decision. But, again, I have not talked to their counsel who will be handling the matter.

HEARING OFFICER FAY: Okay, so we'll

hear from you as soon as you learn?

MS. HOLMES: Yes.

HEARING OFFICER FAY: Thank you.

MS. POOLE: This is the first that I've heard about the schedule for hearing on CURE's petition, and as soon as we get that data I'll also notify the Committee, as well.

It's my understanding that a decision is made typically at those hearing board meetings.

PRESIDING MEMBER MOORE: This is the first I've heard about it, too, so we're all hearing about it simultaneously. Mr. Grattan.

MR. GRATTAN: If I might, I start to see our schedule slipping as we even speak. I think yesterday the Committee made an appropriate decision that nothing they heard with regard to this appeal was going to delay the hearing schedule, the Commission hearing schedule.

I think we made the point that the DOC, for Commission purposes, is a final DOC. I would not feel very comfortable about the Commission deferring its responsibilities pending an event in the other forum.

PRESIDING MEMBER MOORE: Understood. Your objection and reservation is understood.

HEARING OFFICER FAY: I'd like to just briefly follow that up. Mr. Grattan, what do you envision us doing, absent that information? We know that there's --

MR. GRATTAN: If you'll speak up? I'm sorry.

HEARING OFFICER FAY: Do you think we should just move forward?

MR. GRATTAN: Yes, I do.

HEARING OFFICER FAY: And then deal with that information later in our record?

MR. GRATTAN: That's correct.

HEARING OFFICER FAY: Okay.

MR. GRATTAN: If anything needs to be changed based upon that appeal then I, you know, then I guess we would have to open up the record. But I doubt if that's --

HEARING OFFICER FAY: You're optimistic about the results of --

MR. GRATTAN: We have to be.

HEARING OFFICER FAY: And that can certainly be dealt with as we would still need a representative of the district to sponsor the final DOC, even if it was subject to appeal at the time --

MR. GRATTAN: Correct.

HEARING OFFICER FAY: -- that it was sponsored.

MS. POOLE: Just to clarify something. If there are changes made to the conditional final DOC as a result of that appeal, would the Committee hold subsequent hearings to hear testimony about those changes?

HEARING OFFICER FAY: It would depend on the nature of the changes. If they were modest enough and could be entered by some representative from the district, we would bring it in at a later hearing.

It's possible that the district could submit something on affidavit. I mean there are a number of ways that we could get additional evidence into the record. It just depends on how significant it is, and what kind of additional review might be needed.

MS. POOLE: Okay.

HEARING OFFICER FAY: And that's what I foresee.

Anything further then, before we get started? All right.

Our hearing today is on worker safety

and fire protection, and we ask Mr. Grattan if the applicant is ready to proceed.

MR. GRATTAN: Yes. Scott Galati is going to present our case today. And I turn it over to Mr. Galati.

MR. GALATI: Again, similar to yesterday, we'll be presenting a panel. At this time I'd like to call Mr. Jim Bunker and Mr. Kim Worl. Both of them need to be sworn.

Whereupon,

JAMES BUNKER and KIM WORL

were called as witnesses herein and after first being duly sworn, were examined and testified as follows:

MR. GALATI: I'll be starting with Mr. Bunker.

DIRECT EXAMINATION

BY MR. GALATI:

Q Mr. Bunker, could you please give your name, address and current employment?

A James Bunker. I'm a Senior Geologist with Dames & Moore. We're located at 911 Wilshire Boulevard, Suite 700, Los Angeles, California.

Q Have you prepared and previously submitted written testimony in this AFC

proceeding?

A Yes, I prepared the supplemental testimony on worker health and safety as part of the applicant's testimony package.

Q and are you sponsoring any exhibits at this hearing?

A Yes, I'm sponsoring two exhibits, my supplemental testimony regarding worker health and safety, and a phase II environmental site assessment report.

MR. GALATI: At this time I'd like to have those marked next in order.

HEARING OFFICER FAY: All right, the next exhibit number is 45. And what is exhibit 45, I'm sorry?

MR. GALATI: Supplemental testimony, worker health and safety, docketed on November 22, 1999.

HEARING OFFICER FAY: Okay. And the other one will be exhibit 46, please identify that again.

MR. GALATI: And that's the phase II environmental site assessment.

BY MR. GALATI:

Q Can you affirm your previously filed

testimony under oath today?

A Yes.

Q Do you have any corrections or modifications to that testimony?

A No.

Q Would you please summarize your testimony for the Committee?

A I performed a phase II environmental site assessment for the Sunrise Project to aid in the identification and evaluation of hydrocarbon or other impacted soil.

The phase II ESA incorporated the results of the phase I ESA and consisted of 62 soil vapor probes, 44 soil borings and 13 excavations. A total of 128 soil samples were collected with 107 being analyzed for one or more of the following, including hydrocarbons, volatile organic compounds, metals and other parameters.

Three specific areas have been identified that will need to be appropriately managed during construction. These areas include approximately 3300 to 6600 cubic yards of surface soils which were either where oil was applied to control dust, or where crude oil road mix was used to surface the roads and storage yard.

When excavated this material is not a hazardous waste. The Kern County Environmental Health Department prefers that this material be reused as a product such as road base for other oil field operations rather than disposal.

I have recommended that this material be stockpiled and used at other locations within the oil field in accordance with the Kern County Health Department preferences. This material will not be used as fill for the Sunrise project.

The piping manifold area and former sump area were impacted by petroleum hydrocarbons. Most of the impacted soil, however, was removed during the investigation. VOCs were not detected, VOCs being volatile organic compounds.

There is approximately 10 cubic yards of crude oil impact material remaining on site and will be removed and either disposed of or reused off site prior to grading. This material will not be used as fill for the Sunrise project.

The three inactive oil wells within the construction boundary were impacted by hydrocarbons. VOCs, including toluene, ethylbenzene and M&P xylenes were detected. There is approximately 10 cubic yards of this material

remaining on site. Will be removed and either disposed of, or reused off-site prior to grading. This material will not be used as fill for the Sunrise project.

In my professional opinion identified soils containing elevated concentrations of petroleum hydrocarbons on this site do not pose a significant threat to the environment. In fact, it appears to be limited because there is no active oil production occurring at the site.

Historically, oil exploration and production operations at the site have been less concentrated, and only minor quantities of crude oil impacted soils have been found. No other toxic contaminants were identified.

Although grading activities at the site could have the potential to expose construction workers to the petroleum hydrocarbon impacted soils, any adverse effects can be appropriately mitigated with the worker health and safety program.

Although it is possible, and in my professional opinion unlikely, that currently unknown soil contamination is discovered, any adverse effect on workers can be appropriately

mitigated with the worker health and safety program.

Q Mr. Bunker, in describing the work that was done in support of the phase II you mentioned that you did how many soil borings?

A We did 44 soil borings.

Q Okay, you also mentioned that you did 62 soil vapor probes, is that correct?

A That's correct.

Q Can you please describe what a soil vapor probe is and what it tells you?

A Yes, a soil vapor probe is essentially a tube that you push into the ground, and at the end you have a screened element that allows you to pull soil vapors into a collection vial, which later can be analyzed for various contaminants.

The soil vapor probes are ideal for gathering information over a large area, because you're pulling soil vapors from a relatively large area.

Q Okay, you mentioned that the phase II incorporated the results of the phase I ESA. Please expound on that for me.

A Yes, phase I is typically commissioned to be performed on a property where there are

potential recognizable environmental concerns. A phase I will typically identify these issues such as tanks or other items. And what you want to do is follow up any recognized environmental concerns with performing a phase II investigation.

Q Would it be fair to say that the exploration and the sampling and testing that were done out there were specifically located at certain locations on the site, based on the phase I?

A Yes, the phase I identified several areas, but additional work in the early phases of the phase II also helped pinpoint areas that were potentially impacted by hydrocarbons. Those included the idle oil wells, the production manifold piping area, and several other areas that definitely required investigation.

Q Mr. Bunker, how many phase IIs have you done?

A I've performed in excess of several hundred.

Q Okay. And in your experience would you characterize this phase II as being -- was it a limited scope of work?

A No, actually this was a very

comprehensive scope of work. The combination of all the elements, the soil vapor probes, the drilling at more specific area, drilling of soil sampling, and also the excavations, as well as the soil vapor survey. It was a very comprehensive program that fully and comprehensively covered the project site.

Q Did you have a chance to review Dr. Fox's testimony?

A Yes, I did.

Q And do you have any opinions about your review of that testimony?

A Yes. I disagree with Dr. Fox's assumptions that the construction site is as contaminated or should be treated the same as the Sierra Pacific Railroad site, or the Sacramento Federal Courthouse.

Those sites involved soils and shallow groundwater that had been highly contaminated with a large number of toxic chemicals including high volumes of solvents. Those sites are akin to Superfund sites, where as the Sunrise project site involves low levels of hydrocarbon impacted soil only. The majority of which was applied as a surface course to roads.

MR. GALATI: At this time I'd like to turn our attention to Mr. Worl.

DIRECT EXAMINATION

BY MR. GALATI:

Q Mr. Worl, would you please give your name, address and current employment.

A My name is Kim Worl, W-o-r-l; I work as a Senior Industrial Hygienist at Radian International located at 10389 Old Placerville Road in Sacramento, California.

Q Can you briefly summarize your qualifications for the Committee?

A I have a bachelors degree in biology and a minor in chemistry from California State University Sacramento. I have a masters degree in pharmacology and toxicology from University of California Davis. I have over 13 years of experience working at Radian International as an occupational safety and health professional.

I have served as a health and safety officer for hazardous waste site remediation projects or investigation projects probably over 50 over the course of my working career.

Currently I'm serving as the Project Health and Safety Officer on five national

priority listed, NPL listed Superfund sites here in northern California.

Q Have you prepared and previously submitted written testimony in this AFC proceeding?

A Yes, I have. I prepared the testimony for worker health and safety as part of the applicant's package.

Q And are you sponsoring any exhibits at this hearing?

A Yes, I am. I'm sponsoring exhibit number 1, which is the AFC and revisions, sections 8.7. Exhibit number 2, which is the transmission supplement 2, sections 3.7, and exhibit 7, which is the Sunrise comments on the PSA, page 25.

Q Can you affirm that testimony under oath today?

A Yes, I can.

Q Do you have any corrections or modifications to that testimony?

A No, I don't.

Q Would you please summarize your testimony for the Committee?

A It's certain that activities associated with construction and operation and maintenance of

the Sunrise project may present health and safety hazards to the workers at the site.

The Sunrise project has committed to protecting worker health and safety through implementation of the applicable laws, ordinances and regulations associated with worker health and safety.

As described in the AFC, several specific mitigation measures have been incorporated into the health and safety program to protect the workers. And I'll just summarize those very quickly.

Comprehensive health and safety programs will be developed for both the construction phase and the operation and maintenance phases. Those are going to be separate programs.

Each of those programs will consist of smaller plans, health and safety plans, as required by the applicable LORS. In addition to that, to insure the quality and the accuracy of those plans, the principal plans, Sunrise is committed to submitting those plans to CalOSHA consultation for review and comment prior to implementation of those plans.

Some examples of those plans include the

California Injury, Illness and Prevention Program. Again, these are going to be developed for both the construction phase, as well as the operations and maintenance phase. Hazard communication program, personal protective equipment program, and emergency action plans.

In addition to that there will be the implementation of a comprehensive worker health and safety training program, which will include hazard recognition for the workers, will include general site safety, training; will include specific training on construction-related activities, personal protective equipment programs, respiratory protection in confined space, et cetera.

And then lastly, as a portion of the overall health and safety program there will be a safety assessment program in place, where the effectiveness of the implementation of the programs will be reviewed internally for the contractors, as well as by Texaco.

Q Have you reviewed the FSA?

A Yes, I have.

Q Do you have any opinions regarding that?

A Overall I agree with the analysis and

assumptions and conclusions of the staff and believe the Sunrise project, as currently designated, or as currently designed, with the implementation of staff's recommendations, conditions of certification, will mitigate any potential adverse effects to workers associated with construction, operation and maintenance of the Sunrise project.

Q And did you have an opportunity to review Dr. Fox's testimony?

A Yes, I did.

Q And do you have any opinions regarding that testimony?

A I have an opinion on the overall, I guess, position on opinion. I disagree with Dr. Fox's opinion that the program, as it's been defined, or as it's been written out, does not adequately protect the workers, especially the workers who may encounter crude oil impacted soils during the construction activities.

And I have several reasons why I kind of defend that. To begin with, there are allowances within the health and safety programs that we put forth to address how workers should address crude oil impacted soils if they're encountered.

The California Injury, Illness and Prevention Program has specific requirement for what they call a job hazard analyses. As a portion of that particular requirement, you look at the type of work that an individual does, you try and foresee what types of hazards that person may encounter during their work. And then you develop specific action items and procedures on how to safely perform that work.

It is absolutely foreseeable that workers at this particular site, especially performing grading operations, could encounter areas of stained soil or crude oil impacted soils. So as a part of the hazard analysis program we would recognize that and develop the procedures to deal with that.

Those types of procedures would begin, of course, with training on hazard recognition. We'd certainly want the operators to understand, you know, when they could perceive or when they would recognize a hazard exists.

Then we would also have procedures in place for isolating and controlling the site. There would be information on controlling access to that area. I think, as specified in conditions

of certification waste4 we would have an environmental professional available. That person would be contacted and would come out and would assess that particular hazard, and make a determination on where to go from there.

All of those procedures would be in place to I guess address potential hazards associated with those wastes.

There is also, as Mr. Bunker mentioned, if you look at the information provided in the phase II ESA, this really is a site that has the potential, certainly has crude oil impacted soils, but we are not talking about a high hazard site here. Sixty-two soil vapor probes did not detect any volatile organic compounds. I mean that's pretty substantial. So I feel the overall risk associated with the site is relatively low.

In addition to the fact that Mr. Bunker recognized or identified areas of impacted soil, a geophysical survey was also conducted as part of the phase II ESA. That geophysical survey comprehensively covered the entire footprint. The purpose of that survey was to identify subsurface structures, piping, abandoned piping, any of the process-related equipment that might be beneath

the soil.

Those particular items that were identified will be removed prior to the beginning of mass grading. In addition to the fact that any areas that were identified during the Phase II, those will be removed, as well, before mass grading begins. Again, we're going to be reducing the potential for exposure there.

I also, as Mr. Bunker mentioned, I disagree with any type of comparison between what is going on over here at the Southern Pacific Railyard and this particular site. I do not feel that's an accurate comparison. There's just completely different types of usage patterns and history of chemical usage, and an existing contamination in that particular situations, and those sorts of things just aren't the case on the Sunrise project, or in the footprint there.

Therefore, any types of programs that are in place to deal with hazards at the Southern Pacific Railyard are well beyond, orders of magnitude beyond the types of controls that I feel are appropriate at the Sunrise project.

Q Thank you.

MR. GALATI: I have one follow-up

questions with Mr. Bunker.

Mr. Bunker, again, if you could briefly summarize the quantities of materials in the three areas that you identified in the Phase II?

MR. BUNKER: Yes. We had three areas. One area is essentially an equipment yard and a roadway which are covered with oil-impacted soils to a depth of six inches to one foot. There's approximately 3300 to 6600 cubic yards because it's spread over quite a long roadway.

We have two additional areas. One is referred to as the piping manifold area and former sump area. This area is where crude oil pipelines, production pipelines join; seven separate pipelines join. And there's some scattered hydrocarbon or crude oil-impacted soil surrounding some of those pipes.

Also three inactive oil wells within the construction boundary. This area also has some minor crude oil surrounding the production piping.

Both of the latter areas we have approximately ten cubic yards of impacted soil.

MR. GALATI: And, Mr. Worl, based on that information, do you believe that that warrants a worker safety health risk assessment?

MR. WORL: I don't. My professional opinion is no. I believe those areas can be excised without that degree of risk assessment.

MR. GALATI: Turn the panel over for cross-examination. First I'd like --

HEARING OFFICER FAY: Would you like --

MR. GALATI: -- to move the exhibits in.

HEARING OFFICER FAY: Is there any objection?

All right, then the exhibits that Mr. Galati's witnesses have identified are moved into the record at this point.

Ms. Holmes?

MS. HOLMES: I have no questions.

HEARING OFFICER FAY: Ms. Poole.

MS. POOLE: Just a minute, please.

HEARING OFFICER FAY: Certainly.

MS. POOLE: Yes, I do have some questions.

CROSS-EXAMINATION

BY MS. POOLE:

Q I think this first one goes to Mr. Bunker. You mentioned in your testimony that if soil contamination is discovered, further soil contamination is discovered during construction,

that you thought an appropriate health and safety program would adequately protect workers.

What would be the components of that health and safety program that would protect workers?

MR. BUNKER: Actually, for worker health and safety I'd have to defer to Mr. Worl, who would be in a position to prepare such a plan.

MS. POOLE: Well, you must have had some basis for the conclusion, both in the Phase II and in your testimony today, that a health and safety program would adequately protect workers?

MR. BUNKER: Before any type of Phase II or remedial investigation is performed, a health and safety plan is prepared to protect all the workers. That includes the consultant and various subcontractors, any other people that are on a job site.

These health and safety plans are prepared with a general knowledge, or if you've already done some Phase II characterization work, more specific knowledge of what the intended contaminants that may be encountered are.

So, generally these plans prepare the people in the field to go in with a certain level

of safety protection equipment, monitoring equipment, et cetera. And furthermore, all of the people are required to have the appropriate training that is necessary that you can anticipate and spot a potential hazard, or that you have the proper monitoring equipment ready and et cetera, et cetera.

So, yes, in all cases people that are well trained and have such a plan are in a position to be protected in this situation.

MS. POOLE: Specifically, what type of protective equipment would protect workers from unexpected encounters with crude oil impacted soil?

MR. BUNKER: Crude oil impacted soil, crude oil, itself, is a relatively innocuous contaminant. It's not something that's going to require a high degree of safety protection.

In this case people would be, most likely would initially be working in what's referred to as a level D safety level, which requires steel-toed boots, hardhat, safety glasses, et cetera. So, it's a relatively minor or a low level of protection.

In various plans, depending on what may

be encountered, those levels are then upgraded, depending on the judgment of the health and safety officer at the site, the site safety officer.

MS. POOLE: Okay. Again, in your experience with the site and the types of hazards that may be encountered there, what level of protective equipment do you think would be appropriate when those types of unexpected areas of contamination --

PRESIDING MEMBER MOORE: Actually I don't think that question goes to him. He's already indicated that he isn't the one who is responsible for that. You've asked him for his opinions, but I think if you got that kind of specific question you have to direct it to the other witness.

MS. POOLE: Okay. Mr. Worl, can you answer that question?

MR. WORL: Can you rephrase?

MS. POOLE: I'm wondering specifically what level of protective equipment you believe would be adequate to protect workers, given the type of contamination that exists here, if unremediated pockets of contamination are encountered.

MR. WORL: Decisions on personal protective equipment are made based upon existing knowledge, and what is found at the site due to real time monitoring. And I'm referring to air monitoring.

Based on what we've seen in the Phase II environmental site assessment, we did not see any volatile organic compounds, the benzenes, toluenes present in soil gas. Soil gas is a great determiner of potential airborne concentrations because those are very volatile substances.

My initial opinion on that would be that work would be constructed, the construction workers will be performing their work in level D personal protective equipment. If they encountered a pocket or recognized an area of crude oil impacted soil, the environmental professional would come out with real time monitoring equipment and make measurements of airborne concentrations of chemicals at that time.

If personal protective equipment needed to be upgraded, meaning the workers needed to be protected against the airborne hazard, then respiratory protection would be used.

MS. POOLE: So the health and safety

program would require that if areas of contamination are identified, construction stops, the environmental monitor comes out, monitors the area for I guess ambient air monitoring, and then protective measures are taken?

MR. WORL: Specific procedures, as I talked about a little bit earlier, in the California Injury and Illness Prevention Program is part of the hazard analysis and the recognition that we may encounter those areas, there would be step-by-step procedures on how to respond in those events.

Obviously the first response would be to remove people from the area. Then we would call the environmental professional out and have them conduct real time monitoring of those areas to determine if there is an eminent immediate airborne hazard.

Based on the soil gas numbers that I'm seeing from the phase II, it's unlikely that would happen. But, in that event, the environmental professional would make those airborne measurements, and then make some sort of determination about where that material needs to go.

MS. POOLE: So specifically in this case that will occur? Construction will stop when that's identified, and the environmental professional will come out and monitor?

MR. WORL: Construction will stop at that pocket. At that -- where we see that material, yes, construction activities will stop. Does that mean grading activities are going to stop 200 yards, 300 yards, you know, a quarter mile away, that is going to be the determination of the environmental professional based on the potential hazards that he is seeing through the air monitoring equipment.

MS. POOLE: Okay. This question I think is also for you, Mr. Worl.

When you talk about the project footprint, as you did today, you're referring to the 30-acre project site that was assessed in the phase II?

MR. WORL: I am.

MS. POOLE: You also mentioned that pipes will be removed prior to mass grading. How will that occur?

MR. WORL: That's an area that I don't have enough experience in to tell you the details

of how that would happen. I'm not going to make an assumption there.

MS. POOLE: Can Mr. Bunker answer that question?

MR. BUNKER: I don't know.

MS. POOLE: Mr. Bunker, in the phase II, at the bottom of page 21, there is a recommendation that upon removal of all visually identified stained soil confirmation samples be collected and analyzed to verify that hydrocarbon concentrations are below the soil action level established for the site.

Have those soil action levels been established?

MR. BUNKER: No, they have not.

MS. POOLE: When will those be established?

MR. BUNKER: Those action levels actually probably will not need to be established in that none of the material being removed is going to be used as a waste material and designated thereas.

So, they'll actually be reused as a product elsewhere in the oil field. And based on that, the action levels will not be generated by

an agency such as Kern County, et cetera, because there are no -- the groundwater's very deep and there are no potential impacts for groundwater, surface water, et cetera.

So, really, this exercise is one that will be one to remove as much of the visually impacted soil as possible. And then take some soil samples.

If you've seen the material and you've been in the area, it's not a question of anything being gray. It's literally black and white. Either the material's impacted or it's not. But just to confirm that all the hydrocarbon impacted material has been removed, some soil samples would be taken. And those most likely verify very low concentrations, if any, of remaining hydrocarbons in soil.

So, it's not a direction action level at this time. One may be negotiated with the location oversight agency, such as Kern County. I did explore some of that with them earlier on, and they generally evaluate it on a case-by-case basis.

MS. POOLE: So this recommendation, then, essentially can't be complied with if there

are no soil action levels, is that right?

MR. BUNKER: Well, give me a minute to read through --

MS. POOLE: Sure, it's the last paragraph on page 21.

MR. BUNKER: In my professional opinion and using other guidance documents, if you will, prepared by the regional water quality control boards or state water quality control board, and also talking with Kern County, for material to be left in place at this site, most likely the action level that would be developed would be in excess of 10,000 mg per kg of crude oil impacted soil.

Those are very high levels that can still be left in place. And the intention of removing the impacted soil will reduce concentrations well below that, below that standard.

MS. POOLE: So that's the default standard you use?

MR. BUNKER: That's a default standard that's generally used. As I indicated, they would evaluate this site, as all sites, on a case-by-case basis.

So if one would need to be established

chances are it would be 10,000.

MS. POOLE: Okay, well, I understood you to say earlier that they would not be evaluated at this site in establishing soil action levels. So I'm trying to figure out what --

MR. BUNKER: I understand.

MS. POOLE: -- it is that you're going to be testing these soil samples for. What level is going to make you go back and take out more?

MR. BUNKER: The local agency has indicated virtually no concern with this material because it's crude oil in an oil field. And they deal with this on a very common basis.

We would almost establishing a clean-up level of 10,000 mg per kg for soil is well within the given guidelines that are generally used, because again, water is not threatened.

MS. POOLE: So is that the level you'll be using, that 10,000 level?

MR. BUNKER: It's not established as of yet.

MS. POOLE: And you don't intend to establish it?

MR. BUNKER: That's not for me to say. I've been charged with doing this phase II work,

with giving recommendations to our client. And it has not moved past that point.

Now, you're moving more towards mitigation or remediation. That's not my scope of work.

MS. POOLE: Okay. In appendix C of the phase II, you include several chromatograms.

MR. BUNKER: Um-hum.

MS. POOLE: And there are several peaks in those chromatograms that indicate VOCs are present. Now, I understand that some of those peaks reflect the injection of standards for calibration of the equipment. What do the remaining peaks represent?

MR. BUNKER: You are correct, the standards are the peaks that are shown. I am not a chemist. And I do not fully know how to interpret chromatograms. The chemist of record has stated in the report that no detectable VOCs were found. So this statement is by that chemist.

MS. POOLE: Okay.

MR. BUNKER: Actually, it's in the sentence right here, "Target compounds include all those listed in the initial calibration. No tentatively identified compounds, TICs, were

detected in any of the samples."

MS. POOLE: Well, we're confused by that conclusion because there are some peaks in there that aren't -- that don't correlate with the injected standards, but -- Mr. Worl, can you explain that, or is that beyond your experience?

MR. WORL: No, I have not reviewed that data and would be reluctant to offer any opinions on that.

MS. POOLE: Okay.

HEARING OFFICER FAY: Counsel, could you cite the ones that you're referring to? I see the first one has quite a high peak. Are there others?

MS. POOLE: Appendix C, --

MR. GALATI: I would just like to state for the record at this point we have no testimony from any expert or any witness on how to read this chromatogram, and that this is counsel's opinion only on whether or not VOCs are present.

MS. POOLE: In appendix C there is a tab called chromatograms. The first table behind that is not what we're referring to, that's the ambient air table. All of the subsequent graphs are what we're referring to.

HEARING OFFICER FAY: All right. Thank you.

MS. POOLE: Will contaminated soil that was identified in the phase II be cleaned up before construction of this project begins?

MR. BUNKER: I'm sorry, was that directed at me or --

MS. POOLE: Either one. Would you like me to repeat it?

MR. BUNKER: Please.

MS. POOLE: Will contaminated soil that was identified in phase II be cleaned up before construction of this project begins?

MR. BUNKER: That is my understanding from our client, yes.

MS. POOLE: Will Sunrise comply with the recommendations in the phase II for all soils that exceed these levels, not just the three specifically identified sites?

MR. GALATI: Excuse me, counsel, exceed what levels?

MS. POOLE: Exceed the levels that are identified in here as levels of concern.

MR. GALATI: I would object to the extent that if you could refer me to where there

are established levels of concern.

MS. POOLE: There are three areas which you refer to, I believe Mr. Bunker, where you recommend further clean-up action. Something triggered your recommendation for further clean-up action there. I'm wondering if whatever triggered that will be applied to all soils that exceed those specifications?

MR. BUNKER: Yes. As I stated earlier, we performed a very comprehensive investigation of the site using all available methods that we could to try to identify and locate and quantify any impacted soil.

To the best of our knowledge and my opinion we have identified all of those areas, and we have recommended, and it's my understanding that the project site will take steps to essentially mitigate those three areas that we did find.

But the area is also going to require a large amount of cut and fill, or grading operations. And the reason for this exercise was to identify anything so that there would be no surprises found in those grading operations.

So, yes, the answer to your question

would be two part. One, to the best of our knowledge, there is no additional contamination. But, two, if pockets of contamination, or actually just crude oil impacted soil, were identified, those would be removed.

MS. POOLE: Okay. Let me clarify. I'm concerned about areas beyond those 30-acre sites that was assessed in the phase II, areas in the three-quarter mile radius in the oil field, and areas of linear corridors which were not analyzed in the phase II.

Does your response stay the same for those areas?

MR. BUNKER: I was not charged with looking at any other areas other than the plant construction footprint.

MS. POOLE: So you don't know if areas of potentially contaminated soil will be remediated in those areas?

MR. BUNKER: No, I do not.

MS. POOLE: The witness did say, "No, I don't know"?

MR. BUNKER: Sorry. No, I do not.

MR. GALATI: I'd like to just lodge an objection for the record at this point, that we're

getting into an area that deals with the scope of the blueprint, and the scope of the Commission's jurisdiction and duty looking at environmental impacts. And I think that it's beyond these witness' expertise to be able to comment on that.

MS. POOLE: I'm not asking about the --

HEARING OFFICER FAY: Yeah, it hasn't gone into that, Mr. Galati, and I think we have to, you know, I'm going to have to deny the objection. Because we certainly have to understand just how far the phase II study went. So that we know what area was studied.

MR. GALATI: Yeah, I'm objecting to the types of questions that have asked whether or not there will be action taken by the third party thermal host if anything is encountered in the third party thermal host's field. And so those are the questions that I'm objecting to, not to what scope was this work done.

HEARING OFFICER FAY: Okay.

MS. POOLE: Mr. Bunker, there has been a stream identified, I guess it's called the blue line, that crosses the main access road to this site. And Sunrise has applied for a streambed alteration permit for that.

Do you know whether that area was included within the geographic area of the phase II?

MR. BUNKER: I know that it specifically has not been included.

MS. POOLE: Thank you. Could I ask you to turn to appendix C of the phase II, there's a blue sheet called data. And the first page behind that. Can you explain what this table is at the bottom of this page?

MR. BUNKER: Once again, I am not a geochemist or a chemist, and it's not in my professional duties to interpret the results. What I need to have in this particular case, with no reported results, are just a statement from the state-certified laboratory that no VOCs were detected.

MS. POOLE: So you don't know what this table is?

MR. BUNKER: I don't think it's my position right now to give a partial opinion regarding this table.

MS. POOLE: Okay, thank you. I think that's all my questions.

HEARING OFFICER FAY: Okay. A few

questions from the panel.

EXAMINATION

BY HEARING OFFICER FAY:

Q Is it fair to say that the scope of the phase II analysis was limited to the area defined as the plant site?

MR. BUNKER: Yes.

HEARING OFFICER FAY: And that the pipeline route, transmission line corridors and other ancillary linear facilities were not part of that definition?

MR. BUNKER: They were not part of the phase II. They were part of the phase I.

HEARING OFFICER FAY: I see. Mr. Worl, I believe you said that there's a high correlation between the soil vapor probes and normal construction experience, is that correct?

MR. WORL: I hope I didn't say that. I may have. I'll correct that.

HEARING OFFICER FAY: Well, let me ask my question.

MR. WORL: Okay.

HEARING OFFICER FAY: I'd like to know if you have experience comparing the results of vapor probe tests, such as were done here, with

results of real time air monitoring that later occurred during construction.

MR. WORL: I'll answer in this way, hopefully I'll get the answer to your question.

From the standpoint of a health and safety professional going out to a hazardous waste site, or any type of chemical exposure site, the best information that I can get for a soil-related issue is soil vapor concentrations.

Soil vapor concentrations essentially reflect to a degree the types of volatile compounds that may be present if you were to shave off the top of that layer and expose that impacted soil.

It's much easier to extrapolate potential airborne concentrations that a worker may encounter from soil gas information than it is, per se, from groundwater information, or from soil, direct soil information.

So, I personally feel, and I think it's supported in the literature, that soil gas numbers, while they don't directly correlate to what a worker airborne concentration may be, because you just don't know how the soil is going to be managed, but there is a correlation between

those two.

HEARING OFFICER FAY: So, in your business, is that the practice then to essentially use that information from the soil probe as your signal as to what level of caution to anticipate during construction?

MR. WORL: That is one of many things that are considered. Certainly the toxicity of the compound is a very important factor as well. You can have low soil vapor concentrations and an extremely toxic material, and that would obviously cause a different degree of concern.

So it has to -- several things are factored into that equation, but one of the primary ones is are we seeing any of these species in soil vapor.

HEARING OFFICER FAY: And is one of the greater risks, to the extent there are risks involved in grading of this project, just that some of these petroleum byproducts might become airborne just through the grading process? And so respirators or some sort of breathing protection might be required at certain points?

MR. WORL: My opinion is that either inhalation or dermal contact are going to be the

two primary issues associated with a construction worker encountering this material. Keeping it off your skin obviously, and keep from accidentally ingesting it or certainly breathing it would be effective ways of controlling a worker's potential exposure to those.

HEARING OFFICER FAY: And did I hear one of the panel say that it's very obvious whether contamination has occurred or not? The soil is either black from oil or it's not?

MR. BUNKER: I stated that. That is the case.

HEARING OFFICER FAY: Okay, so that it's a fairly reliable signal when to require respirators for your machinery operators, that sort of thing, is that correct?

MR. WORL: I would say that just the mere presence of that material doesn't necessarily mean that you need respiratory protection. The real discriminator there would be the results of actual air monitoring. Whether you use the real time air monitoring equipment to sample directly off the material, or whether you've already made a cut through the material and you're measuring off the exposed surface.

HEARING OFFICER FAY: Okay. And is it your experience that in large projects such as the Sunrise project, that these injury and illness prevention plans are designed in such a way that there's a considerable amount of flexibility to allow reaction at the time to discovered materials or risks?

MR. WORL: In my opinion that's really the purpose of the IIP -- the injury illness prevention program, is to try and address potential hazards up front, and then establish a series of response actions that will be initiated once, if that situation arises.

You have a particular job activity and from that you identify a number of hazards, be it someone, the spot might get run over by the excavator or something like that. One of those hazards that we would identify in this situation is encountering crude oil impacted soil.

And from that you would follow through with these procedural steps.

HEARING OFFICER FAY: In your experience have these plans been successful at avoiding the kind of risks that are anticipated?

MR. WORL: The success of the plan, I

think, is just really based on how well it is controlled. A site safety officer, I think, is a very effective means of managing those activities, an environmental professional who is there to monitor those activities, I'm confident could mitigate those issues.

HEARING OFFICER FAY: Any redirect, Mr. Galati?

MS. POOLE: I do have a recross if I can --

HEARING OFFICER FAY: Well, that's -- all right, go ahead.

RECROSS-EXAMINATION

BY MS. POOLE:

Q Mr. Bunker, you stated that the phase I encompassed all linears. The phase I was limited to an 80-acre site, correct?

MR. BUNKER: To the best of my knowledge, yes.

MS. POOLE: So that did not encompass all linear corridors including the transmission line corridors associated with this project?

MR. BUNKER: I did not specifically -- I did not prepare the phase I, my company did. I used some of the information from that in

performing the phase II work. But I would have to review the document to see exactly what they do encompass.

MS. POOLE: Okay. Mr. Worl, you just mentioned that in your opinion the success of that injury illness prevention plan depends on the site safety officer. Is it your recommendation that the environmental professional be on site at all times?

MR. WORL: It's my opinion that it would be a more effective and efficient response if the environmental professional was on site.

MS. POOLE: Thank you.

HEARING OFFICER FAY: Anything further, Mr. Galati?

MR. GALATI: Yes, I have a question first for Mr. Worl.

REDIRECT EXAMINATION

BY MR. GALATI:

Q With respect to the three-quarter mile radius, is there any regulatory program that affects -- that applies to oil field workers?

MR. WORL: CalOSHA does have the petroleum safety orders that protect -- are designed to protect workers during drilling and

production operations. Those are specifically Title 8, sections 6500 through 6693.

The purpose of those are directed at all drilling and oil production activities, are designed to protect the workers from hazards that are anticipated during those activities.

MR. GALATI: And that would include hazards of them coming in contact directly with the oil that they might be producing, correct?

MR. WORL: Oh, absolutely, yeah. There's specific sections in there regarding airborne exposure, chemical hazards, hazardous substances, et cetera.

MR. GALATI: And would you expect the concentrations of coming in contact directly with produced oil to be higher than coming in contact with soil that had crude oil in it?

MR. WORL: I'm not sure I would be willing to make a position on that. I would be comfortable saying that I am certain that there are higher volatile fractions in crude oil that's just come out of the well, for instance, than there would be in crude oil that's sat on soil at a given temperature for a period of years.

MR. GALATI: Mr. Bunker, have you ever

been involved in any remediation projects?

MR. BUNKER: Yes.

MR. GALATI: And in those remediation projects did you operate under a health and safety program?

MR. BUNKER: In all cases.

MR. GALATI: And was your opinion based -- your recommendation that a health and safety plan would mitigate, was it based on that experience?

MR. BUNKER: Yes, it was.

MR. GALATI: With respect to the lab testing that was done, first I want to direct your attention to the soil gas laboratory.

Did you say that that was a state-certified laboratory?

MR. BUNKER: That's correct.

MR. GALATI: And were the samples that show the chromatographs, were they performed by a state-certified laboratory?

MR. BUNKER: All of the tests were performed by the same laboratory, and it was a state-certified laboratory.

MR. GALATI: Okay. If I could just have one moment to confer with counsel and my witnesses

to see if --

HEARING OFFICER FAY: Certainly, --

PRESIDING MEMBER MOORE: Why don't we take a five-minute break. And we'll come back at 10:15.

(Brief recess.)

PRESIDING MEMBER MOORE: Staff presentation.

MS. HOLMES: Thank you.

HEARING OFFICER FAY: I think we were with Mr. Galati, he was --

PRESIDING MEMBER MOORE: Oh, I'm sorry, yeah --

HEARING OFFICER FAY: -- still working on his redirect.

PRESIDING MEMBER MOORE: Redirect, yes.

MR. GALATI: I had one redirect question for Mr. Bunker, and that is, with respect to the questions that you were asked regarding the soil action level at the site, can you explain to us what you found in the phase II site assessment that describes the extent of the contamination?

MR. BUNKER: Yes, it does seem like it requires a little more explanation.

The impacted soil was identified at

these three stated locations. The roadmix is essentially just like asphalt, where oil and dirt has been blended and applied and/or oil has been sprayed over dirt.

The material is readily obvious, just like the difference between looking at your yard and looking at the street. It's very discolored and stained.

The crude that's in the other two locations, the piping manifold area and the inactive oil wells, is very similar. It's a very black viscous material that is surrounding various piping.

So, again, it's very obvious and apparent. So getting to an action level for what is to be left in place, in all essence the material is all going to be removed, because it's going to be removed on a visual basis.

And as you look at the lab data, once you -- either the concentrations or 50,000 ppm or they're essentially zero, and it's because you do have this great disparity.

So an action level at this time has not been established. It may be established at a later time when we get to that, the mitigation of

these three areas.

But it's not an area of particular concern at this location, because we're not dealing with a lot of standard issues like impacting groundwater or other issues of that nature.

Does that explain that a little better?

MR. GALATI: Yeah, thank you. I turn over the panel for any further cross based on that question.

HEARING OFFICER FAY: Okay, any recross within the scope of the redirect?

None, all right. Well, thank you -- anything further from the Committee?

PRESIDING MEMBER MOORE: No.

HEARING OFFICER FAY: Just one other thing.

FURTHER EXAMINATION

BY HEARING OFFICER FAY:

Q I wanted to ask either of the panelists if they've had experience with the type of standards that other agencies apply to the construction of the linear facilities that are involved in this project, the pipelines, and the transmission lines.

Do you know, in general, what types of health and safety standards would tend to be applicable for the construction of those facilities, or are there any?

MR. WORL: I'm not sure I understand the thrust of the question. You mean in addition to CalOSHA would there be other agencies that regulate health and safety for activities that occur for instance on the transmission lines or in the oil field areas?

HEARING OFFICER FAY: Yes.

MR. WORL: I don't believe there's any that are regulatory in the sense that you're breaking the law if you don't follow them. CalOSHA pretty much has that, that's their duty, really.

But I believe there is the oil, I think it's called DOGR, Department of Oil and Gas, they have internal procedures or safety standards which they recommend for work in the oil fields, as well as the transmission line folks, obviously, with the high voltage electricity.

But typically CalOsha, under the construction safety orders, and the general industry safety orders, are going to have areas

much like they had with the drilling and oil production group, specific safety orders for that type of work.

HEARING OFFICER FAY: So would you expect that at least the typical hazards that are known for construction of those types of facilities will be addressed through existing requirements?

MR. WORL: Absolutely.

HEARING OFFICER FAY: All right, thank you.

Thank you, Mr. Galati. The panel is excused. And we'll ask staff if they're prepared to present their testimony.

MS. HOLMES: Yes, we are. I'm going to be calling Mr. Tooker who will be sponsoring worker safety and fire protection, of course, and exhibit 32. I'd also like to have identified an MOU that I passed out yesterday as an exhibit, and have Mr. Mike Ringer, who testified in the waste area earlier in these proceedings, available to discuss that.

There's also been some discussion today about waste4 and how it works, so he's also available to answer any additional questions that

have come up as a result of the worker safety testimony we've heard today.

So, come on, Mike, don't be shy. I believe that Mr. Tooker needs to be sworn, but Mr. Ringer does not.

HEARING OFFICER FAY: Mr. Ringer has been previously sworn and remains under oath.

Whereupon,

CHRISTOPHER TOOKER

was called as a witness herein and after first being duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. HOLMES:

Q Mr. Tooker, was the worker safety testimony in exhibit 32 prepared by you or under your direction?

A Yes, it was.

Q And was a statement of your qualifications also included in exhibit 32?

A Yes, it was.

Q And do you have any corrections to make to your testimony?

A No, I do not.

Q Are the facts contained in your

testimony true and correct to the best of your knowledge?

A Yes.

Q And do the opinions contained in your testimony represent your best professional judgment?

A Yes.

Q Would you like to provide a brief summary of your testimony?

A Yes, I would. Staff has reviewed the Sunrise Cogeneration Project's application for certification to determine whether the project, as proposed, has proposed adequate measures to comply with applicable LORS which have been discussed here today, to protect the workers during construction and operation of the facility, including site preparation and remediation prior to construction, to protect against fire and to provide adequate emergency response procedures.

With respect to the existing services, off-site fire protection for the project will be provided by the Kern County Fire Department. And the Kern County Fire Department has evaluated the potential impacts of the proposed project on their service capabilities, along with evaluating the

potential cumulative impacts from other power plant projects in the area, and has identified some potential service impacts that will need to be mitigated.

And revenues to mitigate those impacts are being recommended by staff under the socioeconomic section with a condition of certification requiring that all parties involved in that provide sufficient revenues to provide the equipment and training needed to provide services.

We believe that with respect to worker safety that the project applicant has provided adequate outlines of their proposed worker safety plans that will be expanded prior to construction and operation of the project as required by conditions of certification safety1 and safety2.

The first department has reviewed Texaco's plans for adding the additional 700 wells, and they have concluded that the impact will not cause any unusual response increase by the department, and that they will not require any additional staffing at this time.

With respect to the drilling and construction activities, we believe that the Texaco Global Gas and power policies, plans and

procedures which are already in effect, will assure safety of workers during oil field operations related to the indirect effects of the project.

As I previously mentioned, we have looked at the cumulative impacts on service capabilities of the fire district, and the fire district is approaching mitigation of those service needs by engaging in a dialogue with not only the project applicant, but other project applicants in the general area.

And this applicant will be required to continue to participate in that process and to provide the revenues identified by the district.

So, in conclusion we believe that if the project proponent provides a construction safety and health plan and an operation safety and health plan as required by the conditions of certification, safety1 and 2, and provides the funding required by condition of certification socio2, staff believes that the project will incorporate sufficient measures to insure adequate levels of industrial safety and fire protection to comply with applicable LORS.

That concludes my summary.

MS. HOLMES: Thank you. What I'd like to do now -- I'm sorry, did you have a question? What I'd like to do now is ask that the Committee identify the MOU between the Energy Commission and the Department of Toxic Substance Control as an exhibit.

HEARING OFFICER FAY: The next exhibit number is 47, that will be exhibit 47.

MS. HOLMES: Okay, thank you.

DIRECT EXAMINATION

BY MS. HOLMES:

Q Mr. Ringer, you have previously testified in the waste area in this proceeding, is that correct?

A Yes.

Q And are you familiar with the MOU that's just been identified as exhibit 47?

A Yes.

Q Would you please summarize what it is and how it works?

A The MOU between the CEC and DTSC was signed in 1997, and its purpose is, among other things, to facilitate coordination and communication between two agencies regarding potential site cleanup issues at any of the power

plant applications for certification that we receive, or any amendments that we receive.

Generally, when we receive any kind of communications from either potential applicant, or when we receive an AFC we would notify the appropriate person within DTSC, as we did in this case. In the Sunrise case, contact with DTSC last December, and we sent them an AFC.

They look at the AFC and if they think that there's any issues that they need to become involved with, they would let us know. This started with the San Francisco case that was prior to this MOU. That's why this MOU was developed, because in that case there was some remediation that needed to be done.

And we wanted to make sure that DTSC became an integral part of our process. They're pretty overworked, and to the extent that either an applicant or the Commission, without this MOU, would go in to talk to them, they may not be able to give us the help in a timely fashion, you know, absent this MOU.

Attachment A to this MOU pretty much spells out DTSC's site mitigation program policy procedures. And in that document -- let me back

up for a second -- DTSC does have a process called the voluntary cleanup agreement. That an applicant can go into and request to become part of this process.

And the advantage to the applicant of doing this is that they can clean up a site under DTSC guidance and authority, and at the end of this, as long as they comply with DTSC's oversight they can get pretty much a clean bill of health from DTSC.

This is not the only procedure that DTSC has for this. They also have something called a designated site process. And that's another avenue whereby DTSC oversees cleanups.

In either case at the end of the process DTSC, if it's done to their satisfaction, will sign off and give the site a clean bill of health.

The Sunrise project, given the phase I and the phase II results, DTSC has not seen the necessity to play a large part in this. To date, it's pretty clear from the phase I and the phase II that there's not a lot of remediation that needs to be required. And any remediation that would be done is most likely to be fairly simple and straightforward.

In this case, if it turned out that there would be something different, attachment A does specify the steps that are to be followed by an applicant under DTSC guidance, including removal action, work plans, the possibility for more site characterization, the possibility of remedial design and implementation plan. And there's areas there that specify different things that an applicant would have to do.

And that also includes preparation of the health and safety plan for any site remediation that needed to be done for submittal to DTSC for their approval in accordance with standard practices for health and safety plans.

If there was indication that there needed to be more extensive site remediation at that point, then given conditions of certification, proposed conditions of certification waste4, DTSC would be consulted and then they would be asked to give an opinion as to the extent and nature of the remediation that would need to take place.

And at that point is when we would start this process. To date, right now in this project, we see no need to start this process.

So that pretty much summarizes the MOU.

Q Thank you. I have one follow-up question about it. You referred to two processes for site remediation or designated site process and the voluntary cleanup process?

A Yes.

Q Those are available to -- or DTSC can apply those to any entity, correct, including Texaco? Not just Sunrise?

A Right. It's for anybody who needs to clean up a site.

Q I have an additional question about condition of certification waste4. Were you in the room earlier this morning when the Sunrise witnesses were discussing the role of the environmental professional?

A Yes.

Q And do you concur with their discussion of how that role was described, and how the process of the work that the environmental professional would do, do you believe that that was a correct characterization?

A I do.

Q Thank you.

MS. HOLMES: At this point I'd like to

move that the worker safety portion of exhibit 32, and exhibit 47 be moved into the record.

HEARING OFFICER FAY: Is there objection? I hear none, so moved.

MS. HOLMES: And these witnesses are now available for cross-examination.

HEARING OFFICER FAY: Mr. Galati or Mr. Grattan, do you have any cross-examination?

MR. GALATI: I have one follow-up question to Mr. Tooker.

CROSS-EXAMINATION

BY MR. GALATI:

Q Regarding in light of what Mr. Ringer just testified to, is it your opinion that the conditions of certification recommended in your testimony, in combination with the condition of certification waste4 adequately protect workers?

A Yes.

MR. GALATI: No further questions.

HEARING OFFICER FAY: All right. Ms. Poole?

MS. POOLE: Thank you.

CROSS-EXAMINATION

BY MS. POOLE:

Q I think my first few questions should be

directed to Mr. Tooker. On page 5, which is the first page of the worker safety testimony, you state at the bottom of the introduction that unless features of the project present unusual industrial safety problems, staff believes that compliance with the LORS will be sufficient to insure worker safety.

Does contaminated soil present an unusual industrial safety problem?

MR. TOOKER: I believe in this case the record shows that it's not an unusual problem. It is one that has adequate guidance for being addressed, and it is being addressed in consultation with DTSC.

MS. POOLE: On page 9 of your testimony, the second paragraph down, you state that Texaco Global Gas and Power policies, plans and procedures, which are already in effect, will assure worker safety during oil field operations.

Do any of these policies, plans or procedures require soil testing and remediation prior to soil disturbing activities?

MR. TOOKER: I can't speak for that specifically at this point. I would expect they do consistent with the testimony provided earlier

regarding the practices of Texaco and what measures would have to be followed if, in fact, there were such soils identified during their operations.

MS. POOLE: Well, I understood the testimony earlier to be limited to the scope of the phase II which is the 30-acre project site, and to the Sunrise project, and not to be general Texaco Global Gas and Power policies.

Was there anything in your review of those documents that would have required those conditions?

MR. TOOKER: Not specifically, but it's my assumption that to the extent that Texaco's oil field operations are subject to the laws, ordinances, regulations as the proposed project, that they would and do have adequate plans in place and procedures to address those risks for workers.

MS. POOLE: So there's nothing in these policies, plans and procedures to your knowledge in excess of applicable LORS?

MR. TOOKER: Not to my knowledge.

MS. POOLE: Have those policies, plans and procedures been submitted in this proceeding?

MR. TOOKER: Not to my knowledge.

MS. POOLE: Have you reviewed them?

MR. TOOKER: Not specifically. I've had discussions with representatives from Texaco; that was the extent of my knowledge.

MS. POOLE: Okay, on page 13 of your testimony, in the second paragraph down, you state that staff's analysis considered the system design and administrative procedures proposed to reduce the likelihood of an accidental release of acutely hazardous materials that could affect workers.

And then you refer to the hazardous material section of the FSA. However, the hazardous material section of the FSA on page 25 states, quote, "This analysis does not address potential exposure of workers to hazardous materials."

So the FSA does not consider the impact of hazardous materials release on workers anywhere, does it?

MR. TOOKER: The intention of that statement is that we believe that the evaluations done in the hazardous materials section in terms of minimizing the potential for release of materials would provide protection to workers as

well as to the public. Although it's designed, that section specifically addresses releases in the context of exposure to the public, the measures taken to minimize those releases in terms of delivery procedures and check-outs and tank design and storage all would contribute to reducing the potential impact to workers.

MS. POOLE: So the particular impacts of a release on workers haven't been assessed?

MR. TOOKER: No.

MS. POOLE: Thank you. I think this question is for Mr. Ringer. Some questions about the MOU.

Has DTSC specifically reviewed the phase I and the phase II?

MR. RINGER: The phase I was included with the original submittal. The phase II was just presented on November 22nd, so I doubt if they've seen the phase II.

MS. POOLE: Have you sent them the phase II?

MR. RINGER: I didn't, personally.

MS. POOLE: So, to your knowledge they haven't received it and they haven't reviewed it?

MR. RINGER: I don't know if it's been

sent. It's part of the docketed material that's sent out.

MS. POOLE: Well, I don't believe any representative from DTSC is on the service list, so --

MR. RINGER: Okay. I'm not sure because originally they were sent the AFC, so I don't know what other documents they've been sent as part of that.

MS. POOLE: So, to your knowledge in your personal knowledge all they've been sent is the AFC?

MR. RINGER: Correct.

MS. POOLE: Do you have a contact person there? It says under condition B2 that DTSC will inform Commission Staff as to which staff will be assigned to review and comment on the project?

MR. RINGER: Yes.

MS. POOLE: Who is that contact person?

MR. RINGER: I believe it's Jerry White.

MS. POOLE: Condition B7 says that DTSC shall assess the need for a site remediation plan. Has that occurred?

MR. RINGER: I believe when they got the AFC they reviewed it, and based on that,

subsequent telephone communications with me they said that they probably wouldn't be spending much time on this.

And if I might amplify for a second, because the results of the phase I showed that there was very little any kind of conditions of concern on site, so DTSC, given their workload and whatnot, I don't think would place this in very high priority.

MS. POOLE: Do you agree with the recommendations in the phase II?

MR. RINGER: Yes, I do.

MS. POOLE: Does it recommend site remediation activities?

MR. RINGER: To some extent it recommends, I believe that 10 cubic yards of soil be removed. And that other soil be stockpiled.

MS. POOLE: Paragraph B9 in the MOU states that for any portion of site remediation activities that will occur after site certification, Commission Staff will recommend conditions of certification which require such activities to be conducted according to the requirements of DTSC and the regional board.

Has this requirement been met?

MR. RINGER: Well, I have to go back to conditions of certification proposed condition waste4, which says that if any significant remediation is required, that it be done under the guidance of the county and DTSC.

The spirit of this MOU is that any significant remediation be conducted under guidance of DTSC. I don't think we mean that to say that if a couple cubic yards of soil have to be removed that DTSC will -- for one thing, I know that they're not going to spend any time or staff resources if just a few cubic yards have to be removed.

On the other hand, if additional contamination is found, then, of course, they would be contacted and they would give us the benefit of their guidance and oversight.

MS. POOLE: When you say you know that that's their response, they haven't reviewed the phase II, and you haven't had discussions with them subsequent to that, correct?

MR. RINGER: Correct.

MS. POOLE: Does waste4, proposed condition waste4, incorporate the recommendations in the phase II?

MR. RINGER: Waste4 is more of a generic condition. It doesn't have any specific references to work that's been done in the phase II.

MS. POOLE: Do you intend to incorporate the recommendations of phase II into a proposed condition of certification?

MR. RINGER: I hadn't, but I could.

MS. HOLMES: Just for the record I'd like to note that staff's testimony was filed before the phase II was made available.

PRESIDING MEMBER MOORE: Understand.

MS. POOLE: Would you recommend that those recommendations in phase II be incorporated into a condition of certification?

MR. RINGER: That would be acceptable to me as a proposed condition.

MS. POOLE: I believe you were here earlier when I was asking Mr. Bunker about one of the recommendations in there which goes to -- which requires testing and cleanup to soil action levels.

Now, Mr. Bunker has indicated that specific soil action levels will not be established here. How would you --

MR. GALATI: I object to the mischaracterization of testimony. Mr. Bunker testified that they had not yet been established if they would or would be required. He did not say that they will not be established here.

MS. POOLE: All right. Given the fact that specific soil action levels have not yet been established and may not be established, how would you incorporate that recommendation into a condition?

MR. RINGER: I agree that the establishment of action levels is a site specific activity that typically takes into account a variety of factors, including what types of contamination exists, the toxicity, the extent of contamination, migration potential, the size and proximity of populations in the area, sensitive receptors, pathways to those populations, and given all that, and our knowledge of the Sunrise site leads me to believe that actions levels would either be extremely high, or as was referred to earlier, it's pretty easy to tell, you know, what soil is contaminated and what's not.

So, given that soil that looks like it's contaminated is dug up, and other soils left

behind, it's likely to have extremely low levels. And I'm not sure that action levels, even if you went to another agency, would be established based on the risk at this site, given site-specific factors.

MS. POOLE: In attachment A to the MOU on the bottom of the second page, there is a reference to coordination of public participation activities between CEC Staff and DTSC, so that they meet the requirements of specific health and safety code section, what are these requirements?

MR. RINGER: In general, the requirements, DTSC has their own requirements for public coordination. And to the extent that there's an actual process that we enter into with DTSC where they go through the various procedures that are outlined in this attachment we would want to make sure that these public participation requirements are met.

Absent that specific, entering into an agreement we would just say that the CEC has processed a substitute for that. So, in this particular case, where DTSC is not conducting any of their own hearings or workshops or anything with respect to the process here, I would say that

these don't apply, and instead our own public procedures, whatever we do in that regard, substitute.

MS. POOLE: Thank you, I don't have any more questions.

HEARING OFFICER FAY: All right. Anything further, Mr. Galati?

MR. GALATI: Yes, I only have one clarification.

RECROSS-EXAMINATION

BY MR. GALATI:

Q There was some additional testimony regarding something about Texaco Global Gas and Power. And I just wanted to make the record correct, or at least ask the witness if he's referring, in that section, to the oil field operator. Because that has been stated in others, that is not Texaco Global Gas & Power.

With respect to the plant's policies and procedures, were you referring to the oil field operator, page 9, under worker safety?

MR. TOOKER: Yes.

MR. GALATI: Thank you.

HEARING OFFICER FAY: Ms. Holmes.

MS. HOLMES: I have some redirect. But

I can follow the recross.

REDIRECT EXAMINATION

BY MS. HOLMES:

Q With respect to exhibit 47 and attachment A, Mr. Ringer, are you -- is it your job to coordinate the process that's in part with other people outlined in this exhibit?

MR. RINGER: Yes.

MS. HOLMES: And have you been doing so since 1997?

MR. RINGER: Yes.

MS. HOLMES: And given the history of your involvement with this process, and your review of the phase I study that was done, do you see anything in the phase II that would indicate to you that DTSC would be concerned about the results of phase II?

MR. RINGER: No, I don't.

MS. HOLMES: Thank you. That's all.

HEARING OFFICER FAY: Any recross within the --

MS. HOLMES: Oh, I take it back. But I need to take a moment.

HEARING OFFICER FAY: Sure.

MS. HOLMES: Mr. Tooker, would you like

to clarify the response that you provided earlier with respect to hazardous materials impacts?

MR. TOOKER: Yes, I would. What I failed to mention, and I think it's important to understand, is that in looking at the question of hazardous materials releases and their impacts on workers, that we look at that in the context of how we look at the overall project, and that is we believe that to the extent that the applicant satisfies the requirements of the existing LORS in terms of providing adequate worker safety plans, that those risks will, in fact, be addressed.

And there is a requirement for the operation safety and health program to be submitted, which will include the injury and illness prevention program, the emergency action plan, fire protection plan and a personal protective equipment program.

And many of those elements will contain both guidance to workers as well as education of workers regarding the risks of handling hazardous materials, as well as potential releases.

And those plans will be reviewed by CalOSHA and are expected to have guidance in them and procedures for minimizing -- for the correct

handling of hazardous materials, including anhydrous ammonia, as well as methods for avoiding impacts from such releases if they occur in the work environment.

And that is discussed in my testimony. And I just wanted to clarify that it was not just our assumption that the analytical framework of the hazardous materials section was applicable, as well, to workers, to some degree, in terms of minimizing risks, but that the existing framework of the LORS in terms of worker protection also addressed minimizing risks from such releases in the work environment.

So it was not something that we ignored.

HEARING OFFICER FAY: Is that all, Ms. Holmes?

MS. HOLMES: I have no further questions.

HEARING OFFICER FAY: Okay. Redirect?

MR. GALATI: No further questions.

HEARING OFFICER FAY: Ms. Poole?

MS. POOLE: No, no questions.

HEARING OFFICER FAY: I just have a few to the panel, either one.

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EXAMINATION

BY HEARING OFFICER FAY:

Q In your view would -- and I believe it would be waste4, or any other condition that is within the staff FSA, address offsite linear facilities, pipelines, transmission lines, that sort of thing, that is ancillary to the project?

MR. TOOKER: Proposed waste4 specifically refers to linear facilities, along with the project site.

HEARING OFFICER FAY: So, in your view, if contamination was encountered during construction of these facilities, there are provisions in place to address that for the safety of the workers?

MR. TOOKER: That's correct.

HEARING OFFICER FAY: Okay. And have you reviewed Ms. Fox's testimony on worker safety? Either of you?

MR. TOOKER: I have no specifically.

MR. RINGER: I looked briefly at it.

HEARING OFFICER FAY: I wonder if I could refer you to page 20. At the top she says existing conditions of certification do not adequately address impacts to construction

workers.

And then on page 21 she has some suggestions that should be added. And others, as well.

Have you had a chance to look at those? Would you like to take a minute to review those?

MR. RINGER: Based on a review of this I believe that the existing process for identification of contamination we've talked about today already, and has moved forward, and that the plans that are being developed will surely encompass all of the expectations identified in the bullets on this page.

HEARING OFFICER FAY: I see, so you're not disagreeing with what is stated here. You're saying that the conditions of certification, if they are adopted by the Committee, would create requirements that envelope the ones that Ms. Fox has --

MR. RINGER: Correct. To the extent that those hazards are identified and there is appropriate need for the plans to encompass those risks.

HEARING OFFICER FAY: Thank you. That's all, thank you, Ms. Holmes. The panel's excused.

And I'll ask Ms. Poole if she's ready to present her witness.

MS. POOLE: Yes. I'd like to call Phyllis Fox to the stand.

HEARING OFFICER FAY: Ms. Fox has previously been sworn and remains under oath. Whereupon,

PHYLLIS FOX

was recalled as a witness herein and having been previously duly sworn, was examined and testified further as follows:

HEARING OFFICER FAY: Let's go off the record a minute.

(Off the record.)

HEARING OFFICER FAY: All right, we're back on the record.

DIRECT EXAMINATION

BY MS. POOLE:

Q Would you please state your name and qualifications for the record?

A Phyllis Fox. My qualifications are the same as yesterday except I have one additional day of experience.

(Laughter.)

DR. FOX: I have a BS in physics and, MS

and PhD in environmental engineering from UC Berkeley. And about 28 years of experience. With respect to contaminated sites, I have worked on numerous contaminated sites around the state and outside of California in which exposure of construction workers was a concern.

BY MS. POOLE:

Q Was the testimony regarding worker safety that's been submitted and identified exhibit 43, prepared by you or under your direction?

A Yes, it was.

Q Do you have any changes to your written testimony?

A No.

Q Would you like to summarize your testimony for the record, please?

A Sure. As you all know the Sunrise project is being constructed in the Midway Sunset oilfield. And the Midway Sunset oilfield is one of the largest, if not the largest, in California, which was developed very early.

Development in the Midway Sunset started in the 1890s. And over most of the life of that oilfield practices with respect to handling of

hazardous wastes were essentially uncontrolled.

In the early days of the oilfield it was common practice to dump crude oil and wastes from the production of crude oil directly onto the surface of the ground. Large unlined sumps were sometimes used to contain wastes.

But more interestingly, the stream channels and there are a large number of ephemeral stream channels in the area, were actually used as conveyances for the waste. They were dumped into the channels, and in some cases, the head ends of the channels were blocked off like a dam. Wastes were dumped in there. They would overflow the dam, run down the stream channel, and be disposed of in that way.

It was common for the channels and the sumps to overflow. So there was a lot of mishandling of wastes. And we're not just talking here about crude oil, we're talking about crude oil, and produced waters, and drilling materials, like drilling muds and byproducts from drilling, some of which are quite hazardous. They have hexavalent chromium in them, which is a potent carcinogen.

And there's also a large number of other

wastes that were generated by oil production activities besides just crude oil, like the solids that are generated, for example, from cleaning out the bottom of a tank, or from cleaning out a steam generator.

There are many many dozens of specific types of wastes that are generated from oil production activities, not just crude oil.

So, in my testimony, based on the history of waste handling activities in the development of the Midway Sunset oilfield, coupled with the phase I that the applicant submitted, I surmise that there was a potential for construction worker exposure to not only petroleum contaminated soils, but other materials that may have been buried on site, or dumped on site, or run down the ephemeral stream channel which is immediately to the north of the project site.

And from looking at the AFC and staff's testimony, it's obvious to me that first no analysis had been done to evaluate the impacts to construction workers, and none of the certification conditions in staff's testimony actually address the exposure of construction workers.

So in my testimony I recommended several mitigation measures. The first would be the characterization of all soils that would be exposed, not only the project site, but also the linears and the area within the three-quarter mile that's covered by the indirect impact issue.

Once the disturbed area is characterized, I recommended that based on that characterization a risk assessment be prepared to determine whether or not there were any significant impacts to construction workers.

And that's what's normally done. Normally in a contaminated area like this you do a site assessment, like the phase II, and then you use the data to do a health risk assessment. Based on the health risk assessment you establish cleanup levels to protect the construction worker, or whatever the use of the site is going to be. That hasn't been done here.

So my first recommendation was to assess the site. The second one would be to do a health risk assessment. The third would be to remediate any areas of contamination prior to construction that posed a hazard to construction workers based on the risk assessment.

And then fourth, a health and safety plan on top of that. Because even when you do site assessment, you're not sampling every molecule of soil out there. The samples, if you took a look at figure 1 from the applicant's phase II, and looked where the little dots were, where they collected samples, you'll see that 99.9 percent of the site hasn't been sampled.

Those sampling locations are spread out. There's quite a large distance between them. So there's a significant probability that you're going to encounter something that they didn't find in their measurement program.

So normally you would deal with that by having an aggressive health and safety plan in place, and also have an environmental professional on site observing all of the construction activities, but primarily earth-moving activities. And also collecting samples periodically that would be analyzed even in a field lab, or sent off site for a rapid turnaround.

And that, I think, summarizes my testimony.

Q Does the recently completed phase II analysis change any of your conclusions?

A No. The recently completed phase II analysis enforces my conclusions.

Q Do you have any concerns about the phase II analysis?

A Yeah, I have quite a few concerns with the phase II analysis. The first one, and I think we've had some discussion of that here this morning already, is the phase II analysis only addressed the 30-acre power plant site, itself.

There are 237 acres that will be disturbed, which includes the transmission line, the pipeline corridors and the development within the three-quarter mile circle. There has been no work done on that.

The phase I, itself, covered an 80-acre parcel around the current 30-acre site, and it did not address any of those linears or any of the other areas.

Second, the phase II only analyzed total petroleum hydrocarbon parameters and volatile organic compounds. And that is not a reasonably complete list of things that one would be concerned about when one is dealing with construction worker exposure.

For example, the petroleum contamination

that they found was heavy end petroleum contamination. It had a molecular weight of C23 and up. It's the heavy stuff, not liquid oil that flows.

And one of the characteristics of the heavy ends of petroleum products is it has high concentrations of polynuclear aromatic hydrocarbons, or PAHs. And PAHs, as a class, include a lot of potent carcinogens like benzoate pyrine.

Normally when you do this kind of work on a site that you know is petroleum contaminated in advance you do PAH analyses. We, in our data request, specifically asked that PAH analyses be included in the phase II, and they were not.

And without information on PAHs it's difficult to first establish a soil cleanup level, because the cleanup level that you would establish for petroleum contamination depends on the nature of the petroleum contamination and what compounds might be associated with it.

And here we don't have any knowledge about whether or not there's PAHs associated with these heavy ends. And one would expect that there would be.

Another class of substances that are likely to be present but were not looked for are PCBs, or polychlorinated biphenols. PCBs are in the same family as dioxins, and you all know what dioxins are.

Again, they're potent carcinogens, and they're commonly found in oilfield properties. For example, one of the sites that I'm currently working on is the Guadalupe oilfield in San Luis Obispo County. And there there's a pervasive PCB contamination problem in all of the surface oils. And it's not that uncommon.

The applicant actually talked about PCB contamination problem in the Midway Sunset oilfield in response to one of our data requests. No PCBs were analyzed here.

Another concern I have with this study is it focused on areas of suspected contamination based on the observation of linear facilities, above-ground facilities like a sump and the pipeline manifold, and the disposal yard, and areas with contaminated surface oil.

One of the portions of this study was a geophysical survey to identify subsurface pipelines. And the phase II acknowledges that

there are subsurface pipelines. And I think we heard Mr. Bunker talk about the subsurface pipelines. And he indicated that they would be removed.

However, the thing about subsurface pipelines that concerns me is it's well known that they leak. Almost every subsurface pipeline leaks. There are hundred and hundreds and hundreds of petroleum contaminated sites around the state where the contamination was caused by leaking subsurface petroleum carrying pipelines.

I personally am working on two of them right now. And given that there is a lot of subsurface pipelines at this site, I, had I have been designing the phase II study, would have collected samples along the pipeline corridors. As far as I can tell from looking at the phase II that was not done here.

What was sampled were above-ground manifestations like the manifold where pipelines came together, or a spot where they surfaced, rather than along the buried portion of the corridor.

And, of course, you can spot, you know, oil contamination around a manifold or a valve

above ground, but you can't see the subsurface pipelines. We have no knowledge about whether or not there might be a pool of oil down there.

I mean I'm working on two sites now. One of them, 300,000 gallons of diesel leaking out of the pipelines. Another one, 3 million gallons. I mean this is a big problem and it's well known. And this study didn't look at it.

And then the soil gas survey. I'd like to talk a little bit about the soil gas survey since it was batted around a bit this morning. Soil gas, as you pointed out, is correlated to some extent with the exposure that construction workers would get during the excavation process.

Soil gas -- what soil gas is, is it's basically air trapped between soil particles. So when you dig up the soil that air is released, and that's what construction workers breathe. And it's important to do soil gas work. And I was glad to see that it's in here.

However, the soil gas study that was done, in my opinion, is not useful to evaluate construction worker impacts for a number of reasons. First, the samples that were collected were analyzed in an on-site mobile lab. And on-

site mobile labs are limited in a lot of respects. You can't do the kinds of things that you can do in an off-site lab.

And in this case, the analytical work that was done had a very very high detection limit. When you're doing analyses there's a limit below which the instrument can't read. And that's called the detection limit.

And the detection limit that was used in the soil gas work was 1000 mcg per cubic meter. The normal detection limit that is used in doing this kind of work is between .1 and 1 mcg per cubic meter.

So the detection limit used in the soil gas work that is being proposed as indicating that there's no problem was 1000 times higher than most people use for this kind of work.

Is that important? Well, let me give you some examples. There's some health-based screening guidelines that are commonly used for evaluating the significance of concentrations of things that are measured, like concentrations in air. And they're developed by EPA, Region 9, and they're called preliminary remediation goals.

And for benzene, which is one of the

components of petroleum products that are of concern here, because benzene is a carcinogen the PRG for benzene is -- I know off the top of my head, it's .3 mcg per cubic meter.

MS. HOLMES: If I could just interject at the moment. We would like to have an opportunity to look at the documents --

PRESIDING MEMBER MOORE: Well, actually I was going to ask, was this in your testimony, was this in your submitted testimony?

DR. FOX: I'm not relying on the document, I'm relying on my knowledge. And based on my knowledge the concentration of benzene that is of concern --

PRESIDING MEMBER MOORE: No, that's not the question I asked. The question I asked was, was this set of comments about these likely carcinogens or compounds included in your testimony? Because I don't recall it.

MS. POOLE: If I may, the phase II was submitted after the deadline for testimony, so Dr. Fox's testimony regarding the phase II in particular was not included in her testimony, because we hadn't seen it then.

MS. HOLMES: I'd have to say that I

think these comments go to either the phase I or the phase II, they go to the characterization of the site. I don't think they're specifically dependent upon the provision of the phase II to CURE.

MS. POOLE: Well, Dr. Fox did identify the compounds that she was concerned about in her testimony. That list of compounds is in there.

Her testimony regarding the detection limits that were used in the phase II wasn't possible before we reviewed the phase II.

MR. GALATI: In addition I would just like to point out, in joining in the objection, is that the phase II was done and it was FedEx'd to them so they would have an opportunity to respond, similarly to when we needed to file supplemental testimony, we contacted the Hearing Officer. We arranged to be able to do that. We did that.

We're caught completely off guard with respect to new standards and numbers that are being put in front of the Committee. I may be without a witness to be able to respond to them. And would ask that she be not allowed to testify to things outside the scope of her testimony, or in characterizing whether she thinks the phase II

was appropriate in scope.

She's now talking about health and safety standards. She clearly could have brought those up earlier.

(Pause.)

HEARING OFFICER FAY: We're mindful of the concerns expressed in the objection. It's useful to the Committee, frankly, to hear the witness' responses to filed testimony. And in every case we have now always had the time to ask for rebuttal testimony to be filed.

Obviously that's in the rebutting party's interest to file written rebuttal testimony. But I think we've had other witnesses up here, staff has certainly had witnesses and commented on testimony that was filed without having previously filed written testimony.

So, what we'd like to do is just caution Dr. Fox to keep it as narrow as possible in her comments, keeping in mind that to the extent your comments go far afield of just reacting to testimony that's been filed, you put the other parties at a disadvantage, and raise these types of objections.

So, in the interest of moving forward

we'd just ask you to be as narrow as you can, and to the extent that you're dealing with material that you have not previously filed in writing.

Is that clear?

DR. FOX: I think so. Thank you.

I'm basically commenting on this document.

HEARING OFFICER FAY: And what is this document?

DR. FOX: Phase II.

HEARING OFFICER FAY: The phase II report.

DR. FOX: Phase II.

HEARING OFFICER FAY: Okay.

DR. FOX: And I'm specifically commenting on appendix C to phase II. And I was commenting on the fact that it's not appropriate to conclude, based on this phase II, that there's no impact to construction workers because nothing was detected in the soil gas work.

And the point that I'm trying to make is that one of the reasons that nothing was detected is because the detection limit used in the study was over 1000 times higher than the level of concern for the constituents of interest.

And the example that I was about to make is benzene, which is one of the substances of concern in petroleum products, the level of concern is .3 mcg per cubic meter. And the detection limit that was used in this study was 1000 mcg per cubic meter.

So one cannot say, based on the phase II, that there's no potential for impacts to construction workers.

The same is true with respect to the TPH measurements that they made. The detection limits were the TPH oil parameter was 1000 mg per kg. And in my experience the typical cleanup level for petroleum contaminated sites is 1000 mg per kg. So they used the method that set the detection limit at what is usually the level of concern.

Another concern that I have with the soil gas study, which has already been talked about at length this morning, is the chromatograms. In appendix C, underneath the page called chromatograms, there's a series of graphs that look like this.

And I am qualified to talk about what they mean. And I do understand what they are. These were generated by an instrument called a GC

mass spec, a gas chromatograph mass spectrometer, or GCMS, for short.

And the way it works is you inject the sample in it, and the individual compounds are separated out on the column and identified. So each of these little peaks on these chromatograms represents a specific compound.

And in this work they calibrated the instrument by adding known amounts of six compounds to the sample before they analyzed it to help in the identification.

So six of these peaks on these chromatograms are known standards that they added. But in addition to the six peaks from the known standards, there are in the case of most of these chromatograms, and there's a whole bunch of them, there are additional peaks which are not identified, nor are they quantified.

Yet the introduction to the soil gas survey makes the statement that nothing was detected, including TICs, or tentatively identified compounds.

The thing that's not stated anywhere in here is the following. When you're using one of these instruments you specify a cut-off point.

And anything that is below that cut-off point is not reported or identified. Anything above it is. And you can set that cut-off point pretty high.

I don't know where they set it, but they obviously set it so that all of these other peaks besides the standards show up below it and are reported as not detected. But if you know what you're looking at and you flip through these things you can see that something was detected. Just don't know what it is.

Another thing to focus on in this soil gas study is the table that Ms. Poole asked Mr. Bunker about, which is in appendix C under the tab called data. And she asked him what the table was at the bottom.

Well, that table is a calibration for the six standards that were added to the sample. And the thing about that table that bothers me is the various columns, the first column detector MS, that stands for mass spec. The second column RT, that's the retention time, when the individual compounds are separated out they come out at different times, that's what the chromatogram shows. The retention time is how long it takes each compound to come out.

Area is the area underneath the curve. And then concentration, concentration is normally reported as PPM or PPB or mcg per cubic meter or mass injected. Here it's reported as percent. So, there's no way to tell from this table how much sample was injected in the calibration.

If it was a very high amount, and you're looking for something that's a lot smaller than that, the calibration's invalid. So, what is in here is not enough to allow an educated person to make a judgment about whether the calibration, itself, was even valid.

Another thing that bothers me about it is they did an initial calibration which is recorded in the QAQC section here. Which identifies all of the individual compounds, 44 of them, that were looked for. Well, the initial calibrations were done on August 16th while all the samples were analyzed on August 31st and September 1st. And it's normal to do the initial calibration on the same day that you analyze the samples.

So, in my view there's a lot of problems with this soil gas work, and I certainly would not base any conclusions about what it says as far as

construction worker impacts on it.

Another issue I have with this study is in an oilfield type of environment where historically wastes were disposed of on the surface you would expect to find the highest concentrations of contaminants in the surface soil, in the top couple of inches.

Those soils are also the ones that construction workers will most likely come into contact with. In this work no samples were collected of surface soil.

The first samples were collected at one foot and below. So we know nothing about surface contamination.

And then finally all of the discussion of this report so far has focused on the fact that three areas were found that had elevated petroleum contamination. In addition to elevated petroleum contamination, if you look at the tables, table 1B is a summary of metal data. And table 2B is another summary of metal data.

And most of it's normal, with two exceptions. The concentrations of arsenic are very high. The background level of arsenic in California is about 2 or 2.5 ppm. These samples,

I'll just read the numbers for you, 5.05, 3.80, 3.06, that's close to background, 7.41, 12.8, 3.91, 4.02. They're all high.

Arsenic is a potent carcinogen and it's a skin carcinogen. And construction workers could very easily have their skin covered with muddy soil with high levels of arsenic in it.

Another constituent on here that is high is cadmium. The normal background levels of cadmium are in the range of .2 to .3 ppm. These concentrations, and I'll just read across from table 1B, .88, .76, .94, 2.13, 2.99, 1.57, 0.55. They're all high.

That pretty much summarizes my comments on the phase II.

PRESIDING MEMBER MOORE: I have a question for you, Dr. Fox. And that is were the parametrics of the study design -- for this particular study design, known to you before --

DR. FOX: No.

PRESIDING MEMBER MOORE: -- they started? Is there, in your opinion, a common parametric that's used in a study like this? In other words, for industry professionals, if you commissioned one, would you be commissioning, in

your opinion, virtually the same one that anyone else would commission?

DR. FOX: No, there's a lot of judgment involved, and what goes into it is pretty much determined on a case-by-case basis, based in part on what you see in phase I, based on your knowledge of similar sites.

Like for example in this case, knowing that there were buried pipelines, if I had designed it, I would have sampled along the pipeline corridor, for example.

Likewise, knowing that it's a potentially petroleum contaminated site, in an oilfield which is known to produce heavy oil, which is known to have high levels of PAHs, I would have certainly included PAHs in the sampling protocol.

Likewise, based on my background, I know that PCBs are a problem in oilfields, so I would have included PBCs. But to answer your question, no, there's not any recipe or book that you go to that tells you what you have to measure. It's pretty much professional judgment.

PRESIDING MEMBER MOORE: Okay. Thank you.

BY MS. POOLE:

Q Dr. Fox, you mentioned that the levels of arsenic and cadmium found in the samples are very high. Do those levels exceed levels that would protect construction workers in your opinion?

A Yes.

Q And there's been some discussion this morning about appropriate soil action levels. What do you believe is an adequate soil action level to clean up the soils to protect construction workers?

A The specific soil action level that would be set to protect construction workers depends on the nature of the petroleum contamination and what's associated with it.

If, for example, it had very high levels of benzene like a light petroleum product might, or on the other hand, very high levels of PAHs or maybe some PCB contamination, you'd make a different decision.

But based on my experience most petroleum contaminated sites, the cleanup level is 1000, not 10,000 like Mr. Bunker said. I have never had the fortune of working on a site where

the cleanup level was 10,000.

I've actually worked on sites where the regulatory agency forced my client to clean up to 100 ppm. The site I'm working on right now, the site right now where the cleanup level for plain old ordinary petroleum contamination is 100, not 10,000.

Q Do you believe, given the characteristics that have been identified here in the phase II, that 10,000 is adequate to protect construction workers?

A I don't feel like I know enough about the petroleum contamination to answer that for sure. The one thing that bothers me is the conclusion of the phase II that it's C23 and higher material. C23 means it's heavy. And heavy material normally has pretty high levels of PAHs. So I would suspect that 10,000 is way too high here.

MS. POOLE: That's all my direct.

HEARING OFFICER FAY: All right. Mr. Galati.

MR. GALATI: I'd like to suggest at this time since I heard some criticism of the phase II I'd like to be able to confer with my experts. It

might be a good time for us to break for lunch, before my cross-examination.

PRESIDING MEMBER MOORE: All right. It's 11:30. I'll go along with that. We'll be back here then at -- or it's 11:35. Let's come back here no later than 12:30. And finish up.

MR. GALATI: Thank you.

(Whereupon, at 11:35 a.m., the hearing was adjourned, to reconvene at 12:30 p.m., this same day.)

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AFTERNOON SESSION

12:31 p.m.

HEARING OFFICER FAY: Mr. Galati, are you ready to proceed?

MR. GALATI: Oh, yeah.

HEARING OFFICER FAY: Cross-examination.

MR. GALATI: Pardon me, but if I could have two more minutes.

HEARING OFFICER FAY: All right.

(Pause.)

HEARING OFFICER FAY: The floor is yours.

CROSS-EXAMINATION

BY MR. GALATI:

Q Dr. Fox, throughout your testimony, and your written testimony specifically, on page 13, starts with historic practices in Midway Sunset oilfield, you cite several reports that there's contamination across the Midway Sunset oilfield, is that correct?

A Yes, that's correct.

Q Would it be fair to say that those reports that you cite deal with the Midway Sunset oilfield on a global scale? For example, they deal with the entire oilfield as a study?

A Yes, that's right.

Q In the phase I ESA that was performed by the applicant looked at 80 acres, correct?

A Correct.

Q Would you say that the phase I ESA would be more focused than these larger global studies of the Midway Sunset oilfield?

A Certainly it's more focused. The problem with the phase I ESA through is it's based on not only what you can see today, or what you can see off of historic photographs, and there's a lot of historic practices that wouldn't be picked up in that way.

Q Well, didn't the phase I ESA also say that they reviewed historic reports and took into account historic practices, isn't that correct?

A They did not cite any historic reports. They looked at some historic photographs.

Q And after the phase I ESA the applicant conducted a phase II ESA, correct?

A Correct.

Q Would you agree that the phase II ESA is further focusing that attention on the Sunrise site?

A The phase II ESA is focusing attention

on the project site, not on the linears and the three-quarter mile radius.

Q And my question was limited to the Sunrise facility site. My next question would be then doesn't it logically flow that the phase II ESA would be the most accurate data that we currently have in front of us?

A Yes. Based on its limitations, I agree with that.

Q Thank you. You mentioned the possibility of drilling mud being located on the site, is that correct?

A Correct.

Q What evidence do you have to show that there's the possibility of drilling mud on the site?

A It was historic practices to simply dump it on the ground, and there are, based on the phase I and phase II, it is know that there's three wells there. So, it's possible that drilling muds would be there. I don't have any concrete evidence beyond that, except my knowledge of historic practices.

Q In your knowledge of historic practices do you know usually where this drilling mud would

be disposed of in relation to a well?

A You mean how many feet from the well?

Q Yeah, general location.

A In the general vicinity. I couldn't give you a specific number.

Q Would it be fair to characterize that it's pretty close to the well?

A Should be pretty close to the well.

Q And the phase II ESA did quite a bit of investigation around the three oil wells, didn't it?

A It did, but as I pointed out in my testimony, the first sample that was collected was at one foot and below.

Q But is it your testimony that drilling mud is disposed of in the upper one foot of soil, or -- I thought you referred to that as sumps or pits?

A The practice is varied a lot. At one point in time it was common to simply dump it on the surface of the soil. If --

Q Are you --

A -- that was the case, it wouldn't be picked up in a sample that was collected at one foot and below.

Q Yeah, that would be if that were the case. My question is, have you ever seen a sump or pit for drilling mud?

A Yes, I have.

Q And isn't it common practice to recirculate the drilling mud while you're drilling?

A That's current practice, but I was referring to historic practice. I mean that oilfield started production in 1890. And it's basically been intensively produced since then.

Q And so are you testifying that until recently the drilling mud would just be allowed to flow on the surface?

A Yeah, not until recently, but there was a period of time historically when it was common practice to dump always on the surface of the soil.

Q Yeah, and that's what I'm getting at. Hasn't it always been common practice to recirculate the drilling mud to save the drilling mud?

A I don't believe so.

Q Do you have anything to support that?

A Not with me, but I could dig something

like that up.

Q So then your answer would be just speculation?

A Yeah, my answer would be speculation at this point.

Q Thank you. You had testified earlier to a set of protocols, so to speak, to go through that involved characterizing the site -- and correct me if I've got these not accurately represented -- to a risk assessment, then a health and safety plan, and then remediation. Is that the order in which dealing with impacted sites are? Is that the order that you testified to?

A No. First would be the characterization.

Q Um-hum.

A Second would be the site risk assessment. Third would be the remediation. Fourth would be a health and safety plan to address construction worker impacts on the remediated site.

Q Oh, okay, I see. But there would be a health and safety plan prepared before any remediation, correct?

A Right, there would be two health and

safety plans. You know, when you're remediating a site, you always prepare a health and safety plan.

Q Okay.

A But in addition it's common when you have a formerly contaminated site that has been remediated and closed, to additionally require a health and safety plan to protect the construction workers because, as I pointed out, you can't sample every single parcel of soil. And there's always a finite possibility that you're going to encounter unanticipated contamination.

Q Right, and in this case, -- strike that.

With respect to the three-quarter mile radius, you testified earlier that the site soils had not been characterize for that area, is that correct?

A That's correct.

Q Are you suggesting that any time in a oilfield that an oilfield operator wants to drill a well that he should perform a phase II site assessment followed by a risk assessment, a remediation and a health and safety plan?

A If the activity takes place in an intensely developed or otherwise industrialized area where there's potential for significant

exposure, yeah, I would say so.

Q And you would recommend that that be done for the drilling of a single well in an existing developed oilfield?

A Well, normally the development of an oilfield is covered, you know, by an EIR that covers the entire process.

Here what we're dealing with is Texaco's proposed expansion --

MR. GALATI: Again, I'd object to the mischaracterization of the blueprint.

BY MR. GALATI:

Q And my question goes to whether or not you would recommend that that be done for a single well within an existing developed oilfield.

MS. POOLE: I think the witness has answered that. She said that she's talking about the wells that would be developed in association with this project.

BY MR. GALATI:

Q Do you know of any case in which a characterization such as a phase II, a risk assessment, a remediation and a health and safety plan has been applied for oil field development?

A There was a pretty comprehensive

analysis done for the Elk Hills oilfield when it passed from the federal government into Occidental's hands.

Most of the oilfields in California were developed a long time ago, before there were any hazardous waste regulations or CEQA or any other requirement for such a thing.

So, no, it wasn't common historically.

Q And in that transfer from Elk Hills to federal lands, or was there a risk assessment done for worker?

A I'm uncertain. There was an evaluation of health impacts in the risk assessment, but I'd -- in the EIR. The issue was considered. But I'm not -- without having the document in front of me I couldn't answer specifically.

Q And to the same extent that you're recommending, was your recollection to the same extent that you're recommending for the three-quarter mile radius?

A Like I said, I don't have the document so I can't address that.

Q With respect to linear facilities, let's take the transmission line. Do you know how much disturbance is going to take place to put in the

transmission line?

A What do you mean how much? How many acres?

Q Yeah, or what physical soil disturbance will take place for putting in the transmission line?

A I assume, and this is speculation because the AFC is not adequate, I assume that the vegetation would be removed, and the surface leveled in some fashion. And --

Q Would you agree that that's just for the hole locations?

A I don't know.

Q Well, would it surprise you to find that that's just for the pole foundation locations?

A I based, you know, the disturbed area estimates from the AFC was calculated in the biological section. And the area that would be disturbed, based on the AFC, which is the applicant's numbers, are the areas that I'm talking about characterizing.

Q Okay. I'm not focusing on --

A And I believe that's probably just the pole location, although I'm not sure because I personally haven't evaluated the calculations of

those acreages. I am basing my opinion on the calculations of the applicant, and --

Q Okay, thank you. And I'm not focusing on the acreage. I'm focusing on -- it would be fair to say that to build the transmission line, the amount of disturbed soils you're really looking at are the foundations for the transmission poles, correct?

MS. POOLE: This expert isn't testifying to how you build a transmission line. She's based her acreage estimates on things that are in the FSA. And she explained that.

BY MR. GALATI:

MR. GALATI: She did just recently testify that she would agree that it was the pole locations that we're talking about. And I'm just following up to make sure that's what I heard.

DR. FOX: I presume that that's the case, but I did not prepare those disturbed area estimates. I presume that Sunrise prepared them.

From my point of view it doesn't matter what the source of disturbance is. In fact, it is disturbance that is --

BY MR. GALATI:

Q Okay, thank you.

A -- reported in your AFC, and the disturbed land is the area that I'm saying should be characterized, whether it's --

Q Thank you.

A -- the foundations or whatever.

Q And that's what I'm trying to find out, is whether you would recommend -- how many borings would you recommend for the transmission line, to do this characterization?

MS. POOLE: This witness has explained that she hasn't broken down the acreage, so she can't answer, you know, specific to the transmission line.

MR. GALATI: Well, then let me --

MS. POOLE: Would you like to ask that more generally?

MR. GALATI: No, I'll ask it more specifically.

BY MR. GALATI:

Q You mentioned that the phase II on the site you would have recommended more borings or samples be taken, more excavations, is that correct?

A I would have, for example, included borings along the subsurface pipeline corridors.

Q Okay. Do you have an estimate as to how many feet apart those borings would be?

A No. In order to answer the kinds of questions you're asking me I would need to have a lot of additional detailed information that I don't have right now.

Q Okay. What I'm trying to get at is would you put a boring at every location along the transmission route that you were going to put a foundation?

A I would like to know how many of those locations there are, and what the surrounding land use was. I would need to know a lot more than I have in front of me right now.

I have not conducted a detailed design study of the transmission line or the pipeline routes. I just don't know enough to answer your questions.

Q Would it surprise you to know that -- well, you testified earlier that the streams and drainages in the Midway Sunset field were often used for the transport and disposal of expiration production waste, correct?

A Correct.

Q Would it surprise you that none of the

transmission foundations will be placed in any of these drainages or streams?

A I would not expect that they would be.

Q Does that alleviate any -- or at least reduce some concerns in putting these foundations in, that you're likely to encounter E&P waste?

A Well, to the extent that the only disturbance is from putting foundations in, if that were true then it would alleviate some of my concern. But I don't personally know whether disturbance for the foundation is the only source of disturbance.

My understanding is that you clear a corridor on either side of the line for access purposes.

Q You mentioned PCBs, and I think you mentioned that they were in response to Sunrise data requests that the mention of PCBs, is that correct?

A Yes.

Q Do you know which data request?

A It is cited in my testimony.

(Pause.)

BY MR. GALATI:

Q Is it CURE data request 19D? At page 24

of your testimony? Is that what we're looking for?

(Pause.)

DR. FOX: Yes, that's correct.

BY MR. GALATI:

Q We'll have to come back to that, but thank you.

You mentioned that metals were found in the phase II. Isn't it true that those metals were found in the two locations that are going to be removed?

A What do you mean the two locations that are going to be removed?

A Isn't it true that the samples that show that there were metals were taken from the areas that are recommended for removal?

A You mean they're in site development?

Q In the phase II there were three areas identified as being impacted, correct?

A Right.

Q And my question to you is isn't it true that the metals analysis that you testified to were from two of the three areas that were recommended to be removed prior to mass grading?

A Oh, you're referring to the three areas

that are contaminated that would be removed?

Q Correct.

A I haven't looked at the data to determine that. I can do it. I don't know that to be true. There are eight -- there are nine samples.

Q Well, in order to save time I will represent to you that those are areas that are intended to be removed.

A So all nine of these samples are from areas that are intended to be removed?

Q Correct.

A Okay.

Q With respect to PAHs, you testified that this was heavy crude, correct?

A Correct.

Q Okay. And as being heavy crude, one of the things that makes it heavy crude is it's not very viscous, correct?

A Correct.

Q Meaning it doesn't flow very well?

A Correct.

Q And did the phase II conclude that the area where they found contamination around the pipes was pretty localized because the heavy crude

didn't flow very far? Do you remember that in the phase II?

A Yes, I do remember that in the phase II.

Q Would that be -- that's pretty accurate with respect to heavy crude?

A That's pretty accurate with respect to heavy crude, however with respect to the Midway Sunset oilfield, if you read the history of it what you find is early on, during the production of the oilfield, the oils that came up were lighter. And subsequent production is of the heavier stuff. The lighter stuff comes off first. It was produced early on in the history of the oilfield. And then the heavier stuff that remained behind had to be removed using thermally enhanced oil recovery because it is heavy crude.

So just because the heavy crude that was observed above ground didn't move very far, and I agree with you, that's a correct characterization, that doesn't mean that historically during earlier phases of the oilfield when lighter materials may have been handled that you couldn't --

Q And do you have any evidence that lighter materials may have been handled at this site?

A Not at that specific site, but at the Midway Sunset oilfield --

Q But within the oilfield?

A -- absolutely, yes. And it's documented in some of the reports I cite in my testimony.

Q Right, and we agreed earlier that the phase II was probably the best data we have because it is focused on the site?

A Correct.

Q You also, in comparing your experience with pipelines, brought up, I think a project, or more than one project, in which you were dealing with diesel that had leaked, correct?

A Well, it wasn't just diesel. It was a diesel and crude oil and a number of other petroleum products.

Q Okay, and in your experience did the crude oil migrate very far from the pipeline?

A Yes. In this case it did.

Q And if it's heavy and viscous why would that be the case?

A It depends on the viscosity. I mean there's a range of viscosities of oil. And additionally, it was common practice historically to dilute heavy crude so that they would flow.

Delutants were used, materials similar to kerosene for example, were added to the oil to make it flow more readily.

Q And do you have any evidence that that happened on this site?

A No, I don't, but it was a common historic practice.

Q And do you disagree with the phase II observations that nothing could be observed in the excavations to show that the crude oil impacted areas migrated very far?

A No, I don't disagree.

Q With respect to the soil gas, what was the detection limit that you said was used?

A 1000 mcg per cubic meter.

Q Where did you find that?

A A couple places. First, it was in appendix C. That's one of the problems with soil gas study, by the way. It's quite difficult to tease out what the detection limit is.

But there's a calibration standard in here underneath the tab called QAQC.

MS. POOLE: For clarification that's the first page following the QAQC blue page.

DR. FOX: If you just take a look at the

first page, for example, --

BY MR. GALATI:

Q Um-hum.

A -- which is an initial calibration?

A Yes.

Q Dated August 16, 1999.

Q Yes, I see that.

A See the concentrations on the right-hand side under units?

Q Yeah.

A 1.1 mcg per liter. A mcg per liter is 1000 mcg per cubic meter.

Q And that's what's reported there, correct?

A That's what's reported there. The other --

Q If I could just stop you there for a moment. If you look at the top of the page.

A Yes.

Q And that says detection limit report, and it has something in parentheses, 1 NG.

A Um-hum.

Q Do you know what that stands for?

A One nanogram.

Q And that's less than 1 mcg per -- 1000

mcg per cubic meter, correct?

A Yeah.

Q Thank you.

A But that's one mcg, that's a mass, that's not a concentration. The method that was used here, which is described in the text at the front of appendix C, which describes the analytical method. It's on the third page, which describes how the analyses were done.

It tells you a Hewlett Packard model 5890GC was used, together with a Hewlett Packard model 5972 mass spectrometer. Those are pretty standard lab instruments. And GCMSs like this are not very sensitive. The detection limit is typically 1000 mcg per cubic meter for this instrumentation.

Q Yeah, but you don't -- nothing in this report says that that's the detection limit?

A I pointed you to the page, and I'm giving you the further support for what the detection limit is. With this particular instrumentation you can't get a detection limit below about a ppm or 1000 mcg per cubic meter unless you use some type of preconcentration technique like cryro focusing or adsorbent tubes.

And from reading the description here that was not used.

Furthermore, when you don't use cryro focusing or some other preconcentration method it is common to use a large number of internal -- standards such as was used here.

MR. GALATI: If I may, Mr. Fay, bring up that since we didn't have an opportunity to respond, we have made at least a phone call and would have an offer of proof from the laboratory person, the laboratory technician, of what the detection limit is.

I could put on Mr. Bunker to talk about that conversation. That's the best I can do at this point.

HEARING OFFICER FAY: Well, we're going to revisit this, and the parties may have an opportunity to respond to this and other matters concerning the phase II study and appropriate mitigation. Because the Committee is going to have further direction --

MR. GALATI: Okay.

HEARING OFFICER FAY: -- for the parties.

MR. GALATI: If I may just have a moment

to make sure I got everybody's questions?

HEARING OFFICER FAY: Sure. We'll go off the record.

(Off the record.)

HEARING OFFICER FAY: Ms. Holmes, do you have cross-examination?

MS. HOLMES: Yes, I do. Before I begin I'd like to let the Committee know a matter that came to my attention during lunchtime today, and that's that staff's provided DTSC with a copy of the phase II on November 23rd.

PRESIDING MEMBER MOORE: And that clarifies the point that was made earlier, thank you.

MS. HOLMES: I'm going to apologize in advance for my shotgun approach. We've been through a lot of different areas this morning. I'll try to keep it as focused as possible, but I don't guarantee anything.

CROSS-EXAMINATION

BY MS. HOLMES:

Q Earlier this afternoon, Dr. Fox, in response to some questions from Mr. Galati, you referred to, if you will, the order of mitigation measures that you were proposing. You were

talking about characterization followed by a health risk assessment, followed by remediation, followed by a health and safety plan.

And you stated that frequently health and safety plants that go above and beyond typical health and safety plan requirements may be mandated even after remediation. Do you recollect that?

A Yes, I do.

Q Are you aware of whether or not CalOSHA has ever required additional measures be taken for a site for which no responsible agency has determined that remediation is required?

A In my experience CalOSHA is usually not involved in these kinds of sites.

Q Do you know whether or not staff has recommended that CalOSHA be involved in this site?

A I don't recall seeing that in any of the conditions of certification. And CalOSHA doesn't really deal with contaminated sites.

Q You haven't read staff's conditions of certification then?

A I have. Could you point me to the one you're talking about?

Q It doesn't matter, I'll move on. With

respect to the questions about the total number of acres that were disturbed, is it your understanding that within that total amount of acreage the soil will be disturbed by different kinds of activities?

A Yes.

Q And would you expect different levels of disturbance associated with different levels of activities?

A Yes.

Q And wouldn't the type or the level of disturbance affect the risk of exposure to workers?

A Yes.

Q Mr. Galati asked you a question about the samples in which, I believe it was arsenic was found, and he indicated that those nine areas were recommended for removal under the phase II, do you recollect that discussion?

A Yes.

Q With that clarification is it your testimony that the workers will not be exposed to arsenic from those particular pockets or areas where there is arsenic present?

A Well, two comments in response to that.

First, it is not clear to me that those two or three pockets are going to be removed in advance of the construction. It sounds like it's possible that they may be cleaned up during the construction process, itself, through a process that hasn't been well defined and certainly isn't pinned down in the conditions of certification.

And second, the very fact that there are those kinds of high concentrations in three localized areas lead me to believe that it's possible that there are equally high or higher concentrations in many other areas that haven't been sampled.

Q So you believe that even if the soil in that particular area was removed prior to construction there still could be a risk posed to workers?

A It depends on who does the removing, and you know, what kind of personal protection equipment they're equipped with, and what kind of training they have.

And at the moment there aren't any conditions of certification requiring anything in particular.

Q So the concentrations that you

referenced from the phase II, could we turn to those for a second? That's in appendix B. And unfortunately, it's not very easy to find this. It's just before a blue tab --

PRESIDING MEMBER MOORE: The blue tab name?

MS. HOLMES: Well, the blue tab is in the middle of appendix B. I think it may be the only one. The page immediately prior to that.

DR. FOX: Can you find it for me?

MS. HOLMES: Let's just go --

PRESIDING MEMBER MOORE: It's called analytical results, page 17?

MS. HOLMES: That's what mine says, yes. And in the left-hand column down near the bottom there's a list of elements, antimony, arsenic, barium, et cetera.

BY MS. HOLMES:

Q Do you have that in front of you?

A I do.

Q And those concentrations were given in terms of mcg per -- mg per kg of soil, is that correct?

A Correct.

Q So that's ppm by weight?

A Ppm by weight.

Q If a worker were to be exposed to arsenic, what would the exposure route be?

A There would be two principal exposure routes, inhalation and dermal contact.

Q Let's talk about dermal contact first. What's the risk associated with exposure to arsenic?

A What do you mean the risk?

Q Why is it a substance that you're concerned about?

A It's a skin carcinogen.

Q And does the skin cancer that results from exposure to arsenic typically happen through dermal contact?

A Yes. It's a skin carcinogen. It certainly can happen through dermal contact.

Q Isn't it more likely that it's like to result as a result of ingestion or inhalation?

A Not for a skin carcinogen.

Q Thank you. With respect to the inhalation risk, how would you determine the level of exposure that workers would have?

A For inhalation risks?

Q Yes.

A The way you would normally do it is you would estimate fugitive dust emissions for the construction activities. You would take those fugitive dust emission rates and you would use a model like ISC to calculate ambient concentrations.

Q Didn't staff do that in their PSA?

A Staff calculated ambient concentrations outside of the boundary of the plant site, not within the boundary of the plant site, and the concentrations, of course, are always higher right at the source of the dust. They calculated down-wind concentrations, which is the usual way you do air quality work.

Q What would the difference, do you expect, be? How much higher would the levels, the ambient levels be at the site of the disturbance, at the area of disturbance, compared to the area at which staff established its estimates?

A It would be substantially higher. It would be orders of magnitude higher.

Q How many?

A I haven't made the calculations, so I don't know. But it would not be uncommon -- well, it's common, in doing these calculations, to

assume the ambient air quality standard within the construction area.

Q I'm sorry, I didn't understand your answer.

A It's common, in doing these analyses, you know, screening type risk analyses for construction worker exposure, to assume the ambient air quality standard is met.

Q Didn't the air quality PSA section come up with an ambient level that was 200 mcg per cubic meter for PM10?

A A) I don't recall because I haven't looked at the air quality stuff in awhile; and b) as I pointed out, the air quality section was evaluating impacts outside of the boundary of the plant, not at the construction site.

Q Is this a worst case assumption, this 200 mcg per cubic meter?

A No, it's not. It's extremely low.

Q Is that what staff testified to, or stated in its PSA?

A Staff's air quality section on the PSA was dealing with ambient air quality impacts, not construction worker impacts.

Q What is the ambient air quality standard

for PM10?

A There are two. There's a federal and a state. And there's a 24-hour and an annual.

Q Let's focus on the 24-hour state standard.

A The 24-hour state standard, okay.

Q Just do you know what it is?

A I would look it up. If I was in my office I'd pull a book off my shelf and look it up, but --

Q Well, subject to checking, would you be able to answer --

A -- it's like 50 --

Q -- 50 ppm.

A -- roughly.

Q So it's approximately one-quarter of the amount that staff estimated for staff's worst case particulate construction impacts?

A I'm not sure what staff estimated.

Q Okay.

MS. POOLE: I'm sorry, but, you know, we're not in the public health or the air quality hearings, so --

MS. HOLMES: Well, but --

MS. POOLE: -- Dr. Fox isn't --

MS. HOLMES: -- we --

MS. POOLE: I'm not objecting to the line of questioning, but Dr. Fox hasn't reviewed these materials in awhile, so --

MS. HOLMES: What she did do was state that the way that she would assess what the actual risk was, was start with what the ambient concentrations of dust or PM10 in the air. I'm just trying to get from there to the area where we can make some sort of a rough estimate of what that risk is using the methods that she's recommended.

MS. POOLE: That's fine, but what staff has recommended in the PSA, I think, is a little fuzzy in her memory.

DR. FOX: Right, I basically don't remember what's in the air quality section. But if you want to represent what it is, I will take your word.

MS. HOLMES: It's 200 ppm.

DR. FOX: 140, okay, I'll take that.

BY MS. HOLMES:

Q Are you familiar with the NIOSH standards?

A Yes, I am.

MS. HOLMES: And perhaps we should ask the Committee to take official notice of these. These are U.S. Department of Health and Human Services National Institute for Occupational Safety and Health. These are the standards that CalOSHA enforces in California.

HEARING OFFICER FAY: And what version? Can you date it or give us some reference there?

MS. HOLMES: This one says 1994 on it. My hazardous materials person tells me that's the most recent, that the standards haven't changed.

HEARING OFFICER FAY: Thank you, yes, the Committee can take official reference.

BY MS. HOLMES:

Q Are you familiar with those standards?

A I am, but that's not the most recent.

Q Do you know what the most recent standard is for arsenic?

A No, I don't know off the top of my head.

Q Do you know what the standard -- do you know whether or not it's changed since 1994?

A No, I don't know.

Q Do you know what it was in 1994?

A No.

Q If you were to assume that it were 0.002

mg per cubic meter, could you figure out based on staff's assessment of the amount of particular impacts, what the amount of arsenic in the air would be?

A You're asking me to take the 140 mcg per cubic meter --

Q It's 200.

A 200 mcg per cubic meter?

Q Um-hum.

A And the arsenic concentration measured in the phase II, and calculate what the ambient concentration would be?

Q And compare it to the NIOSH standards.

A Yes, I can do that. That's a very easy calculation to make. However, I would point out that the NIOSH standards are not appropriate for what we're talking about here.

Q We can get to that in a moment. I did the calculations and rather than have everybody go through them, the numbers that I came up to, and of course you'll have a chance to state later on if you disagree with my math, which is possible, is .0000024 mg of arsenic per cubic meter, which is significantly below .002. Would you agree with that?

A Well, --

Q Subject to checking.

A -- subject to checking. I don't question you, but I haven't checked those numbers.

Q You've stated that the NIOSH standards are not appropriate for assessing the worker exposure to arsenic, is that correct?

A That's correct. Those NIOSH standards are not used in my experience for evaluating worker health impacts at contaminated sites. The more usual standard that is used at contaminated sites are the EPA Region 9 PRGs, which I referenced earlier. PRG stands for preliminary remediation goal, and they apply specifically to contaminated sites. They're not regulatory. They are simply guidelines.

But those goals include air standards that apply to contaminated sites. And the arsenic PRG is substantially lower than that NIOSH number that you've been using.

Q What is it?

MS. POOLE: I would also like to ask the Committee to take official notice of those EPA PRGs, and that is in an EPA Region 9 memo dated October 1, 1999. Subject, Region 9 preliminary

remediation goals.

MR. GALATI: I would object --

MS. HOLMES: Are these the ones that we asked for copies of earlier today? Are these the same standards that were referred to earlier today that we asked for copies of?

MS. POOLE: Yes. I don't recall you asking for copies, though.

MR. GALATI: I would object, only to the extent I'm not sure that that's a formally adopted rule such as NIOSH is, and whether or not the Committee could take official notice of it. Until I have a chance to review, I'd like my objection to stand.

HEARING OFFICER FAY: All right, your objection is noted. And subject to review.

Do you have an adequate reference to be able to follow up on that?

PRESIDING MEMBER MOORE: Well, plus we'll get copies. Can you go to the number that Ms. Holmes just asked for on that list and tell us whether it's different than the number she's using out of the NIOSH list?

DR. FOX: Yes, I'm there.

PRESIDING MEMBER MOORE: Okay. How

different is it?

DR. FOX: The number in the EPA PRG list is .00045 mcg per cubic meter. She's talking about mg per cubic meter. It is several orders of magnitude smaller.

PRESIDING MEMBER MOORE: If she quoted the number right.

DR. FOX: If you did the calculation that Caryn just posited using this as the criterion it would be handily exceeded.

PRESIDING MEMBER MOORE: Is the table, Ms. Holmes, that you quoted from in micrograms or milligrams? Because clearly that's order of magnitude difference.

MS. HOLMES: The NIOSH standard is in milligrams.

PRESIDING MEMBER MOORE: Okay.

MS. HOLMES: The staff's calculation of the PM10 levels was in micrograms per cubic meter. No, the amount that we were referencing in the preliminary staff assessment of 200 mcg per cubic meter of PM10.

I have attempted to make the correction from micrograms to milligrams, and now Dr. Fox is going back to micrograms again.

PRESIDING MEMBER MOORE: Okay. This is an interesting calculation and I think we can revisit this when we've all got our calculators out and look at the conversion factors. Maybe we could clearly --

DR. FOX: I can put it in the same units as Caryn has hers.

PRESIDING MEMBER MOORE: That's fine, as long as we're in the same -- use the same denominator.

MS. HOLMES: I'd like to ask a few more questions about the preliminary remediation goals. It's actually a document I'm not familiar with.

BY MS. HOLMES:

Q Could you please explain what those goals -- what EPA uses this document for?

A They are guidelines intended to be used in preliminarily assessing whether or not cleanup is warranted at a contaminated site. And they are health-based, they are calculated from a risk assessment.

And there are four sets of them. There are preliminary remediation goals for soils that would be redeveloped as residential property. There are preliminary remediation goals for soils

that would be redeveloped as industrial property. There are ambient air remediation goals which was the one that I was just talking about. And there are tap water remediation goals in cases where there's a possibility for ingestion.

Q Does EPA recommend that those guidelines be applied to worker exposure?

A EPA is silent on that point.

Q Does EPA state that these are public exposure levels?

A No. If you'll look at the tables used to make the calculations they specifically accommodate workers by specifying an exposure period that's -- members of the public.

Q I thought you said it was silent with respect to workers?

A It doesn't make a recommendation about whether it should be used for workers or not used for workers. But if you look in here you'll find there's a table that lists the assumptions.

Q That's once the cleanup has been made, correct?

A No. These are screening levels that are used to evaluate a contaminated site before it's been cleaned up, typically. And they're used in

helping to make the decision of whether or not cleanup is required.

MS. HOLMES: I have some questions about this. And perhaps what would be best to do is to have -- I'd hoped to get a copy at lunch, it didn't happen -- get a copy and maybe after a five-minute break when I'm done with the rest of my questions we could come back. I can't --

PRESIDING MEMBER MOORE: Well, actually I think there's going to be an opportunity to do that in terms of the Committee ruling on the next steps here.

So, you may get more than the five minutes that you're asking for to look at this. But let me go to your question for just a second, the one you just asked.

And that is if this report that Dr. Fox has in front of her is used to establish thresholds that determine whether or not a contaminated site ought to be then cleaned up, i.e., a trigger mechanism of some kind, exceed this threshold and it qualifies for cleanup, or remediation of some kind, then I'm going to presume that the standard that would be achieved, that they would hope to achieve at the end of that

is substantially lower than whatever that trigger is.

Am I on the right track?

DR. FOX: Pretty much on the right track. Usually the way these are used is to help assess whether or not cleanup is required. And when you exceed these numbers, what will usually happen is the regulatory agency will require a more detailed look. They'll either require more sampling, or they'll require a site-specific risk assessment.

PRESIDING MEMBER MOORE: Let's say that they do go ahead and they clean things up. Is it fair to say that once the cleanup is done you'd expect the levels that would be alarming or would establish a new threshold to be significantly lower than those levels?

DR. FOX: You would hope it would, yes.

MS. HOLMES: Well, --

PRESIDING MEMBER MOORE: Do you want five minutes, Ms. Holmes?

MS. HOLMES: I'm at a bit of a loss to know how to proceed. It would be helpful perhaps if I knew what the Committee was considering in terms of further opportunities to revisit this

question. You know, if this is something that the Committee wants to come back and have us talk about again when we're doing air, for example, and I don't know that that's what you're considering. Perhaps it would be best to quit and regroup and spend some more time reviewing these documents in depth than trying to get the questions down in five minutes. If you're talking about, you know, extending the hearing, issuing a notice of continuance, I just don't know what it is you're considering.

PRESIDING MEMBER MOORE: Let's take five minutes. You organize yourself and get access to the document. Counselor, we've got a copy machine that we can get access to pretty fast, --

MS. HOLMES: That'll take five minutes.

PRESIDING MEMBER MOORE: -- and make everybody a copy. Five minutes we'll come back.

(Brief recess.)

PRESIDING MEMBER MOORE: Back on the record.

MS. HOLMES: Thank you. What I'd like to do now is just to move on to some more general questions. We're all waiting for the document in question to arrive.

BY MS. HOLMES:

Q Dr. Fox, it sounds to me as though -- let me see if I can summarize your position and have you tell me whether I've accurately stated it or not.

Would you believe that under normal circumstances workers are adequately protected by the CalOSHA regulations, including the NIOSH standards that they enforce?

A No, I don't.

Q You believe that those are not sufficient to protect workers?

A I do.

Q And you believe that they are particularly not sufficient to protect workers if a site is, as you've described it, contaminated?

A Well, they're not intended to protect workers who are digging in contaminated soil. They're mainly oriented at inhalation exposures in an industrial work environment.

Q Is it a fair characterization to say that you've identified the Sunrise site as a contaminated site?

A Yes, that's fair to say.

Q What's your definition of a contaminated

site?

A A contaminated site is one that has concentrations of contaminants that exceed normal background levels.

Q By any amount?

A Well, you can define contamination to mean by any amount. Now, whether or not it would pose a health risk or warrant remediation, that's a different question.

Q Well, I'm asking you what your definition is of a contaminated site.

A A contaminated site that would warrant remediation and pose a public health hazard, the level at which that would occur would be calculated from a health risk assessment.

Q Do you think that the Sunrise site poses a public health hazard?

A Do you mean public health to include workers?

Q Just, I'm trying to feed back your own words to you. Just talk to me about a contaminated site being one which needed remediation because it exposed -- because it created a public health hazard.

A I think it's possible that the Sunrise

site poses a hazard to construction workers.

Q And the way that you would determine whether or not the concentrations are sufficient such that it could be designated a contaminated site would by be doing -- by conducting a health risk assessment?

A That's right.

Q Doesn't a health risk assessment typically assess risks associated with a lifetime of exposure?

A No. In a health risk assessment you can pick whatever exposure time you want.

Q Isn't it usually over a 70-year life span?

A The averaging time is over a 70-year life time, but the exposure time, which is different from the averaging time, is set based on the scenario that you're evaluating. For a construction worker it would be the length of the construction project. For a typical resident it would be 30 years. For a typical industrial worker it would be 25 years.

That's one of the input variables in a risk assessment.

Q And based on your knowledge of the

Sunrise project, what percentage of those 70 years would workers be exposed?

A My understanding is that the construction period is 15 months.

Q The cancer potency levels that are used to establish or to estimate cancer risk, are those based on 70 years of exposure?

A It depends on whether or not you're talking about unit risk value, which is expressed in terms of risk per microgram per cubic meter of exposure --

Q Yes, I am.

A That number, that is based on a 30-year exposure period. But there are also cancer potency factors that are expressed in terms of milligrams per kilogram of body weight. And those do not presume a lifetime of exposure.

And when you have an exposure situation where the exposure duration is less than a lifetime, you would normally use the cancer potency factor rather than the unit risk factor.

Q Don't the regulatory agencies use the risk factor?

A AB-2588 risk assessments typically use the unit risk factor if you do the calculations

using the ACE-2588 model. However, DTSC, when they're doing a risk assessment say for a construction worker at a contaminated site, will typically use cancer potency factors expressed in terms of milligrams per kilogram of body weight, which does not assume a lifetime of exposure.

Q Is your definition of a contaminated site the same as used by those agencies that are charged under the health and safety code with insuring that contaminated sites are cleaned up?

A You need to be a little more specific. What exactly do you mean?

Q Are you aware of whether or not there are agencies under California law that are directed to insure that contaminated sites are cleaned up?

A Yes.

Q Is your definition of a contaminated site the same as theirs?

A All of the agencies that I have worked with that are charged with cleaning up contaminated sites will require a risk assessment be done. And if the risk exceeds the significance level that they select, and that typically ranges between one in a million and ten in a million,

then they will include the cleanup with the exception of routine, ordinary, run-of-the-mill petroleum contaminated sites. And then there's typically levels like 100 to 1000 ppm which are used if there's nothing unusual about the nature of the contamination.

Q But DTSC hasn't required a health risk assessment in this case, have they?

A I'm not aware that DTSC has looked at any of the documents.

Q You've seen the MOU. It's your belief that DTSC is not carrying out its responsibilities under the MOU?

A I don't have any personal knowledge of that, but I do know that DTSC is under a very burdensome workload and that they probably would not pay attention to this site unless somebody ran a flag up the pole.

MS. HOLMES: I think the record has reflected that DTSC has received the AFC, the phase I, and the phase II reports?

PRESIDING MEMBER MOORE: It does reflect that.

MS. POOLE: Does the record reflect the phase I?

MS. HOLMES: It was part of the AFC.

MS. POOLE: Oh, that's correct.

BY MS. HOLMES:

Q Earlier this morning Mr. Worl, I believe, testified that as part of the illness and injury prevention plan there's a job hazard analysis. Do you recollect that discussion?

A Yes.

Q And are you familiar with that process?

A Yes.

Q Would you agree with his assessment of how that process works?

A Broadly, yeah, that's how it works.

Q Turning now to your written testimony, is it your testimony that there are measures that are available to protect workers but that you believe that they ought to be specified prior to Commission licensing?

A Could you repeat that?

Q I can break it up into two questions.

A No, I wasn't -- I'm a little hard of hearing and I wasn't looking at you. So I didn't hear everything you said.

Q Is it your opinion that there are sufficient measures available to protect

construction workers at the Sunrise site?

A Assuming that they're digging in contaminated soil?

Q Yes.

A Yes, you could specify personal protection equipment.

Q And the crux of the matter, if you will, that you want specified now as opposed to in the various plans that will be submitted post-certification --

A Yes, I want it specified now in the conditions of certification, or alternatively, to have the contamination cleaned up now.

Q On page 19 of your testimony, and at several other places as well, you recommend that soils be characterized and remediated prior to certification.

Do you mean all soils?

A All soils should be characterized, and to the extent that any of them pose a potential threat to construction workers, they should be remediated prior to the start of construction. That's a fairly typical procedure.

Q Are you recommending that the measures that you mention on page 24 involving the use of a

PID and an FID be applied to all earth-moving activities?

A Yes.

Q So for every load of excavated soil you want a sample from every, looks like 1000 cubic yards?

A Right. You wouldn't collect the sample and take it away and analyze it. A PID and an FID is a hand-held sniffer, basically. You just --

Q Well, but you also talked about using a mobile lab or sending it away to a lab?

A Where is that?

Q That's on page 24 of your testimony. I'm trying to understand what the scope of this characterization is going to be.

A The PID and the FID are hand-held field instruments which would require no collecting of samples and sending them away to a mobile lab.

In addition to that -- PID and FID just analyze gross volatile organic compounds. It doesn't break out individual compounds. It's just kind of a lump parameter.

In addition to that, a certain number of samples should be collected, soil samples, collected and either analyzed on site in a mobile

lab, or sent off site for more comprehensive compound-by-compound specific analysis.

Q And should construction be halted during the time that those samples are being sent off to a lab for analysis?

A No.

Q When you talk about monitoring gases by each load, and I apologize for my ignorance, by each load do you mean like each load that the bulldozer moves soil?

A No, no, no.

Q What do you mean?

A What are you referring to, the PID and the FID?

Q Yes, it states that you want a condition that gases be monitored that are emitted by each load of excavated soil. I'm just wondering what the scope of the requirement is.

A I would say every 1000 cubic yards would be fine.

Q So for every 1000 cubic yards the environmental professional should use the PID and the FID, and in addition should take a sample and analyze it on site or send it off site?

A Correct.

Q On page 24 you also discuss remediation of any discovered contamination. I'm going to go back to your definition of contamination at this point. If there's anything about background levels, which I believe that was your first definition of contamination, would you recommend that construction be halted until the health risk assessment could be performed?

A No, I don't think so.

Q Then what level of contamination would need to be remediated? Anything above background?

A The way that it would normally work is --

Q I'm asking what you would recommend in this case. If that's what normally works, that's fine, but I'm specifically focusing on your recommendation.

A What I have recommended in here is that a risk assessment be done, and the risk assessment would calculate cleanup levels. You can reasonably anticipate what kind of contaminants would be at the site, PCBs, PAHs, benzene, toluene, ethylbenzene, crude oil, and given the concentrations based on a reasonable health risk assessment, you can do a reverse health risk

assessment in which you calculate cleanup levels, which you have in your hip pocket.

Then when you find the contamination during the remediation, you'd simply compare the concentration that the lab measured with these cleanup levels that were determined based on the risk assessment. And you would be able to make an instantaneous, on-the-spot decision as to whether or not action is required or not.

Q I'm a little bit confused. This paragraph applies to construction, not the remediation. So I'm having trouble following your logic here.

MS. POOLE: Which paragraph are you referring to? Maybe that would help.

MS. HOLMES: I'm on the bottom paragraph on page 24.

BY MS. HOLMES:

Q Are you recommending that the PID and FID and the sampling be conducted only during remediation activities, or during construction?

The latter is implied in the testimony, but I could be misreading it.

A No, the PID and the FID work would be done during construction. What you're looking for

there is any contamination that may not have been discovered during the phase I and phase II, and any additional site assessments.

Q Right. And I'm asking you if you discover something that's above background, as a result of the PID or FID, or the sampling, how do you determine whether or not remediation is required?

You referred earlier to making that determination based on a health risk assessment. I'm saying if you discover something unexpected during the construction process, regardless of whether or not you've done some remediation prior to that, do you then stop and go through the health risk assessment process in order to determine what's required before construction can continue?

A Well, what would normally happen with the PID/FID screening process is if you get a big hit, and it wouldn't be above background, a big hit. Normally you establish a trigger level, and it's typically somewhere between 25 and 100 ppm VOCs, those are the kinds of numbers that you see, if you get a big hit like that, that usually shuts down the construction. The environmental

professional collects the sample and sends it out for analysis with rapid turnaround, so you get the answers back the next day.

And then the environmental professional would compare that concentration with either site specific cleanup levels that were determined from the risk assessment, or with something like the PRGs, the preliminary remediation goals that we were talking about, to make it an assessment of whether or not those were significant and warranted attention. Or whether you could proceed and there was no cause for concern.

Q So you'd handle those a little bit differently than you would prior to remediation is what I'm saying?

A Yes.

Q Thank you. If something were discovered, contamination were discovered during the construction process, is there a notification requirement on the part of Sunrise to a governmental agency?

A I don't know.

Q I have similar questions -- well, let me just focus first on a paragraph you have on the construction safety and health program on page 20

of your testimony.

You stated that the plans don't address contact with contaminated soil. Are you there? Unexpected contaminated soil.

A I'm there.

Q You haven't reviewed those plans because they haven't been written yet, right?

A Right, they haven't been written yet, but from the summaries that were in the AFC and staff's preliminary and final testimony, I inferred that that was the case, because there's no mention of contaminated soil in them.

Q But they haven't been written yet?

A No, they haven't been written.

Q Also, on page 18 of your testimony, at the last sentence of the first paragraph you state that staff recommended conditions don't require the use of personal protective equipment during earth-moving activities.

Have you reviewed staff's condition of certification worker safety and fire protection 1?

A I think I have, but let me take a more recent look at it.

MS. POOLE: I didn't bring it down with me. Here it is.

DR. FOX: Worker safety and fire protection?

BY MS. HOLMES:

Q Doesn't it say that the personal protective program is one element?

A Which one is it? Worker --

Q One.

A Worker 1. I guess I don't have it.

Q Safety 1, worker 1.

A Safety 1, okay. Safety 1, I got Safety 1. Okay, I've read it.

Q Doesn't it include reference to a personal protective equipment program?

A It does.

Q Thank you. On page 26 of your testimony there was some discussion -- excuse me, I may have a wrong page reference. Page 27. We had some discussion about that earlier this morning.

It's a discussion of a Southern Pacific Railyard site in Sacramento.

A Yes.

Q What kind of contaminants were found there?

A Well, the Southern Pacific Railyard site is a 265-acre site in downtown Sacramento, not

very far from here, which was the former railyard maintenance yard for Southern Pacific's whole western operations.

And depending on where you are on the site, the list of contaminants vary. The construction worker protection program that I included as an exhibit to my testimony was for the federal courthouse site. And that site was primarily a petroleum contaminated site.

Q Was it --

A Other portions of the site have solvent contamination, lead, you know, contamination from sandblasting paint off of trains, and a whole host of other things.

Q Well, I'd like to focus on this discussion here in your testimony. At the Southern Pacific Railyard site do you know whether or not they found aromatic hydrocarbons?

A I believe they did, yes.

Q Chlorinated hydrocarbons?

A There were chlorinated compounds, yes.

Q Are those typically more toxic than crude oil contamination of the type found at the Sunrise?

A Well, aromatic hydrocarbons are present

in crude oil, and my testimony earlier in the day was focused on the fact that one of the problems with phase II is that they did not analyze any aromatic hydrocarbons, because you would expect to find them in crude oil.

Chlorinated compounds, no, you wouldn't expect to find chlorinated compounds in an oilfield environment unless chlorinated solvent was used for cleaning equipment.

Q And that, you have no information that that's happened at the Sunrise site?

A No, I have no reason to believe that there's any chlorinated compounds there.

Q Is PCB a chlorinated compound?

A Yes, it's chlorinated. It's not a solvent, though.

Q Did you testify earlier that there would be PCBs at the site?

A I testified that it was possible that there would be PCBs at the site based on my experience working in oilfields.

Q And where would the chlorine come from at the site?

A Where would the PCB's come from?

Q Yes.

A Transformers is one source.
Q Are there any transformers on the site?
A A transformer was identified in the phase I.
Q On the project site?
A Within the 80-acre boundary of the phase I a transformer was identified.
Q Within the 30-acre site?
A I am uncertain where it falls with respect to the 30-acre site, but --
Q Thank you.
A -- there's lots of sources for PCBs. Another source is in the '50s, '60s and '70s PCBs were used as an adjuvant in the mixing of pesticides, they were commonly present in pesticides which would be used for weed control.
That's one of the reasons that you have a PCB problem all over the central valley of California from their use in pesticides.
Q And is there any evidence that you provided that there was use of these pesticides at this site?
A Nothing specific, no. Just knowledge of historic practices.
Q Thank you.

MS. HOLMES: If I could have one minute to go over the document that was provided to us after we started the cross-examination, or perhaps if the Committee wants to talk to us about what further opportunity they were referring to earlier?

PRESIDING MEMBER MOORE: No, go ahead and take your time, because we already know where we're going.

HEARING OFFICER FAY: Yes, off the record.

(Off the record.)

PRESIDING MEMBER MOORE: Ms. Holmes.

MS. HOLMES: Thank you, Commissioner Moore.

Upon review of the document that's been provided by CURE, it's staff's preliminary opinion that this is --

PRESIDING MEMBER MOORE: Could you identify the document, Ms. Holmes?

MS. HOLMES: It's entitled under the heading, United States Environmental Protection Agency, it's dated October 1, 1999. It says, subject, Region 9 preliminary remediation goals (PRGs), 1999.

I don't know if CURE was planning to have this marked as an exhibit or -- at any rate, it appears to me that we have been talking about a number of issues today that are really public health issues as opposed to worker safety issues.

And staff would like to propose that we, rather than take up more hearing time, continue this discussion in our public health testimony which is due to be filed, I think, on the 17th of December. And we would address the applicability, if any, of this document in that testimony.

And if that's acceptable to the Committee, staff can say that it has concluded its cross-examination.

HEARING OFFICER FAY: That's an attractive offer, counsel. We accept.

(Laughter.)

MS. HOLMES: Thank you, Mr. Hearing Officer.

MS. POOLE: We had not marked it as an exhibit. Would you like to do that?

HEARING OFFICER FAY: It's up to you, counsel.

MS. POOLE: Why don't we do that.

HEARING OFFICER FAY: Yeah, that might

help. That would be, I believe that is exhibit 48. Marked for identification --

PRESIDING MEMBER MOORE: Do you have any objection to it?

MR. GALATI: Not for marking.

HEARING OFFICER FAY: And your objection is noted in terms of the finality of the document. But it is EPA Region 9 PRGs. It will be exhibit 48.

Now, Ms. Poole, we'd ask if you have any redirect.

MS. POOLE: I do.

REDIRECT EXAMINATION

BY MS. POOLE:

Q Dr. Fox, would all potential contamination at this site be documented in historical records?

A No. Historically there was no reporting requirement to document contamination.

Q Can you give us a brief idea of what your knowledge of historic drilling practices is based on?

A It's based on an extensive review of the literature that I did in conjunction with this and other projects.

Q Does the fact that excessive levels of metals were found in areas of soil that will be removed, or that have been recommended to be removed in the phase II, alleviate your concerns regarding other areas of the site and associated linear corridors and well drilling areas?

A No. The fact that there are elevated levels of metals in three areas, assuming that that's correct, and I haven't verified it, but assuming that that's correct, it's an indication that there's a potential for high levels of metals to be present in other areas that haven't been sampled.

Q I believe you agreed earlier that phase II was the most comprehensive information that we have regarding the 30-acre site. Would that be true of other areas not encompassed within that 30 acres?

A No. There's not been any investigations to my knowledge of the remaining 200-plus acres that would be disturbed.

Q Are the NIOSH standards based on a health risk assessment?

A No, they're not based on a health risk assessment.

Q Do you agree that potential contamination here could be readily identified by sight?

A No. Many of the contaminants that we're talking about could not be identified by sight or by odor. For example, the metals could not be readily identified by sight or by odor or by texture, by any other indication.

Likewise, polynucleararomatic hydrocarbons could not be, and likewise PCBs could not be.

MS. POOLE: That's all I have.

HEARING OFFICER FAY: Okay. Mr. Galati.

MR. GALATI: Yes, I have some recross.

RECROSS-EXAMINATION

BY MR. GALATI:

Q Regarding your answer regarding the level of the total acres of disturbance, I think you testified earlier that you got that from the AFC?

MS. POOLE: I think this goes beyond the scope of redirect.

MR. GALATI: I need to at least lay a foundation, and my offer of proof would be that once she could tell me where she got that from, I

would like to ask her some questions about what that number means in her mind.

She's now used it again. And I would like to find out exactly what she's using it for.

HEARING OFFICER FAY: Well, that --

MS. POOLE: What do you mean she's used it again? She didn't just use that acreage number.

MR. GALATI: Total number of acreage disturbed, 236, I think. I'm not sure what number she used.

DR. FOX: I believe I said greater than 200.

MR. GALATI: Okay, greater than 200 acres.

BY MR. GALATI:

Q You testified on redirect that you still had concerns because no study had been done in areas, and I think you said, in over 200 acres that would be disturbed, is that correct?

A That's correct.

Q And I think you testified earlier, and I'm just tying the two together, that you're using the numbers that came out of the AFC for disturbance, correct?

A I believe it's out of the FSA, out of the biology section of the FSA.

Q Okay, and if it is out of the biology section, wouldn't that deal with right-of-way and preliminary site clearing included in that number?

A Yeah, like I said, I didn't go back and verify how they made the calculations, but based on how I would expect that they would make those calculations, it would be based on roads that would be built for access, and a corridor along the pipeline and transmission line rights-of-way that would be cleared and graded in preparation for laying the pipeline, which is frequently subsurface. It's not laid on the surface.

Q And for fire protection clearing vegetation?

MS. POOLE: She has clarified that she hasn't gone back and confirmed how those acreage estimates were calculated.

DR. FOX: I don't --

MR. GALATI: I'm just asking her if she knows.

DR. FOX: I'm just telling you in general how those types of disturbances are calculated. But specifically in this case, I

would have to go back and look at the actual calculations to see what kind of assumptions were actually made. I don't know, as I sit here.

BY MR. GALATI:

Q Okay. If the number of acres of soil that was actually going to be disturbed was less, would that alleviate any of your concerns?

A If it was no greater than the 30-acre site that was the subject of the phase II, yes.

Q Okay. You testified, I think, on redirect about PAHs. Would you expect to find PAH somewhere besides where crude oil was found?

A Somewhere besides where crude oil was found? At this particular site?

Q At this site.

A Yeah, you'd expect to find PAHs in an area where there was a fire, like for example if you had a gusher and it caught on fire, and you had oil burning out there, you would expect to find fairly high levels of PAHs in surface soils.

PAHs are a byproduct of the combustion of organic materials.

Q You don't have any evidence to suggest that occurred at this site, do you?

A No.

MR. GALATI: Thank you. I don't have any further questions, thanks.

HEARING OFFICER FAY: All right, Ms. Holmes.

MS. HOLMES: I have one question, or I hope it's only one question.

FURTHER RECROSS-EXAMINATION

BY MS. HOLMES:

Q A little while ago Ms. Poole asked you about what you referred to as excessive levels of metals in the soil samples. Do you recollect that discussion?

A I think I do.

Q Well, let me try --

A I have to confess, --

Q -- ask my questions --

A -- I'm getting tired.

Q What levels in the soil samples would have caused you to say there is no problem?

A Concentrations that were at or below normal California background levels.

Q Do you know what those are?

A I know what some of them are, yeah.

Q Do you know what normal concentrations for those metals are for Kern County?

A No, I don't.

Q Did you work on the Pittsburg case?

A No.

MS. HOLMES: I have no further questions.

EXAMINATION

BY HEARING OFFICER FAY:

Q Dr. Fox, on page 26 of your testimony you indicate that the conditions of certification that staff has proposed do not require the results of the phase II study be included, and plans required to comply with LORS.

And yet you've criticized that study today and raised questions about its adequacy. Now, I understand the study came out after you filed your testimony. Would you modify your position? I sense a certain inconsistency there, and I'm trying to get that clear in my mind, if you think there should still be a relationship between the phase II study and the conditions of certification.

DR. FOX: I think the recommendations of the phase II for the remediation of the three localized contaminated areas are fine, and I have no problem with those. And I would certainly

recommend that those three recommendations be included as conditions of certification.

However, I would like to see a more comprehensive analysis done of the site. I noticed in looking at the phase II, the chain of custody forms suggest that some samples were held at the lab. And it would be very interesting to analyze those samples for additional contaminants, as well as to collect additional samples for more full analyses.

HEARING OFFICER FAY: All right, thank you, that's all I have.

Anything further, Ms. Poole?

MS. POOLE: Nothing further.

HEARING OFFICER FAY: Okay. Let's go off the record for a minute.

(Off the record.)

HEARING OFFICER FAY: While we were off the record we had a brief discussion about scheduling of the last set of hearings. And no conclusion was reached. The Committee will issue a notice and hearing order shortly that will define when the hearings will take place.

PRESIDING MEMBER MOORE: Let me introduce the item that Mr. Fay has just been

talking about by saying that we haven't, to my knowledge, had a discussion that's been this much in depth about worker safety or soil chemistry or biometrics, if you will, in these hearings.

As a consequence, we've gone and carved out new ground. Frankly, I'm discomfited by the response on all three levels. So, let me just lay it out how I -- you know, this is the economist talking, so I don't have any credentials of anyone else that's been speaking, but I do have a vote. So probably germane.

From the applicant's side I'm dismayed that your chemist and your folks that were doing the reports and the tables that we were looking at were not more complete. And that the baselines that were continuously cited in these discussions were either missing or hard to find.

Again, recognizing that we're all learning here, this is, for some we've gone through something in this depth, but it won't be the last, clearly, especially in that area.

I want to make sure that we establish some sort of standard by which we can come back and critically analyze what we are seeing, or at least understand it more carefully.

And as a consequence what I'm going to ask is that that work be resubmitted to us in such a way that we can understand where the cutoffs are, where the baselines are, and what those peaks and the differentiation between numbers really means.

In the case of the staff, it seems to me that the staff analysis should have taken this into account. I certainly would have expected staff to have read more of Dr. Fox's testimony beforehand. I would have expected a more thorough integration of what was in there, or if there was going to be a refutation of those, I would have expected a more conscientious and expedient refutation of what they saw.

And so I would ask the staff to go back and read those documents, and think about what they mean.

For the intervenors, I'll tell you this. You present an interesting dilemma. It's one I admire in a forensics exercise, and I'm saving up so I can use it later, should I ever find myself in one of those again.

But, you've argued from the general to the specific, and you make it awkward for me to

look at the applicant and say, well, you're guilty of this. Dr. Fox has an impressive knowledge of the chemistry and interrelationship of the environmental factors.

And yet when I see that expressed on a very very generalized basis, as in the oilfield as a whole, I would be shocked as a citizen that we let all that happen during that period, and that it's still out there somewhere. Frankly, I can't make the jump, given the testimony. Can't make the jump to say, I ought to be worried about that on this property. You bet I ought to be worried about it, and I get that.

But transferring that to what the applicant has come up with, given the information that's in front of us, it's hard to correlate the two. And I need to be able to do that. Because you're going to ask me to make a judgment call up here, and I want to be able to do it intelligently.

So, what I need is for a more focused criticism of what the applicant has actually provided, as opposed to the history lesson for the area, which is instructive, but in this case, not conclusive.

So, I guess what I'm saying overall is that we've got three pieces of analysis that are not using the same data. And I need you to use the same data. Because I'm not a chemist, and I'm certainly not a biologist.

So, I hope that that's clear. And in very generalized comments. I'm trying to spread my indictment as fairly as I can. And I suppose some of it should come up to me for not having looked more carefully at those tables so that I could have participated more fully in those discussions. So I'll share the blame.

Let me turn to Mr. Fay and tell you what we intend to do about that, but I hope it's a solution -- it's a solution that I don't intend to have cause any more time delays. I hope that eases Mr. Grattan's mind just a tad.

But it is a solution that I think will result in a more complete record. And frankly, will begin to lay the groundwork for a more consistent analysis of this type of issue for the Commission in the future. And I think that that is part of my mission up here, is to make sure that my colleagues that follow have the same consistent database of information available to

them.

Mr. Fay.

HEARING OFFICER FAY: What we've discussed is that the Committee's most interested not in litigating the quality or accuracy of the phase II study, but rather to focus on and improve upon the conditions of certification so that the Committee, and later the Commission, can have a higher comfort level than is possible now, that workers will be protected against any contaminants that are on that site.

So, I'd encourage the parties to focus on that. And if you believe that the improvements can be based on the existing record, then I suppose to that extent we don't need to take additional evidence.

If you think additional testimony is called for, then I would like to hear from the parties on that.

What I envision is that this would be filed with the filings for the next set of hearings. And the parties are invited, as time allows, of course to get together and try to reach some agreement, if there is a condition or two that needs to be redefined or changed in some way,

add more specificity, whatever. Perhaps we can get some agreement, and that would help the Committee out, as well.

Are there questions about this?

MS. POOLE: I have one question. You said that you'd like this submission to come in with the next round of testimony. If our recommendation may be that additional testimony or additional evidence is required in this area, do you want us to submit that at that time, as well?

HEARING OFFICER FAY: Yes, I'd like to know before then, though, that that is your plan.

MS. POOLE: Okay.

HEARING OFFICER FAY: But it occurs to me it may be possible based on this record, which is substantial, that for instance some of the things that are hoped for, and perhaps anticipated by the parties, but not mentioned in the conditions, can be made more specific, or that the conditions can require that, you know, that the plan shall include at least the following, whatever.

And, in fact, I think Dr. Fox was recommending that at some point. But, that would improve the record.

Any other questions about that? We're really not interested in relitigating all of this. And the window for testimony is a very narrow one. And I only raise it in case a party feels strongly that something more needs to come in to justify a change in the conditions.

I have a feeling that those conditions can be improved upon based on the record we have.

MS. HOLMES: When do you want to hear whether or not parties will be filing testimony? I heard you say that not only are we supposed to file it on whatever day it is that we're designated to file, which in staff's case is the 17th, but that you wanted to know ahead of time?

HEARING OFFICER FAY: Well, I think we have to give the staff more time than they have for the bulk of the testimony. I think they have to file theirs on January 3rd, along with everybody else, just because the time is so short. That puts them at a disadvantage.

Instruct me, when can the parties reach a determination on this? Perhaps some of them have already made up their minds.

MS. HOLMES: Well, I think staff would be filing at least some additional testimony,

we're not going to ignore the broad hint and fail to refile conditions of certification. Obviously we'll be working on those with the guidance that you've offered in mind.

In addition, I think we will probably potentially offer some additional testimony if it's acceptable to the Committee, dealing with the distinction between protection of the public and protection of workers and why there's a distinction, and what the distinction should be.

And that we can file on January 3rd.

HEARING OFFICER FAY: Okay, so we're informed of your plans as of now.

PRESIDING MEMBER MOORE: Bravo.

HEARING OFFICER FAY: Good. Do the other parties know what their plans are at this time?

MS. POOLE: I think we'll need to ponder this for at least a bit.

HEARING OFFICER FAY: Can you let us know by a week from today? And let all the parties know?

MS. POOLE: We should be able to do that, yeah.

HEARING OFFICER FAY: Yeah. Docket

notification, too, everybody on the proof of service.

MS. POOLE: Sure.

HEARING OFFICER FAY: So let's say one week from today.

I turn to the applicant because they have the burden here, but it seems to me that this delay in staff's deadline is fair under the circumstances of this late notice, this added burden.

But it does put you in the position of not being able to react in writing, and having your witness come a week later.

MR. GRATTAN: Well, we've been, from time to time, in that position.

HEARING OFFICER FAY: Yes. This is a narrow --

MR. GRATTAN: I'll tell you what we intend. We don't intend to file new substantive testimony, nor do we think that's necessarily recommended for anyone.

I feel that we've gotten a direction from the Chair to at least provide some context for the phase II study, and we will attempt to do that, but it will not bring in any new evidence.

It will be a exegesis of some of the appendices in there.

MS. POOLE: Now, just in order to avoid any problems about when parties can respond, it sounds to me like the applicant will be submitting some additional information about the phase II.

If, by chance, the parties have some response to that, do you want us to do that in hearings, or do you want us to ask the Committee about additional testimony, or how would you like us to deal with that?

HEARING OFFICER FAY: Mr. Grattan, this explanation, would you be providing that in writing before the next set of hearings?

MR. GRATTAN: Before?

PRESIDING MEMBER MOORE: The next set of hearings.

HEARING OFFICER FAY: Before the next set of hearings.

MR. GRATTAN: Absolutely.

HEARING OFFICER FAY: Yeah.

MR. GRATTAN: Absolutely. And, again, it wouldn't be, I mean there were some questions raised here that our witnesses couldn't answer because this, again, was prepared by a lab. And

we'll go back to the lab and --

HEARING OFFICER FAY: And we anticipate that's only one week before the hearings begin, at this point, I mean based on what the original schedule was. If the parties do file on January 3rd, the hearings would begin one week later.

So I think we're just going to have to deal with oral rebuttal. There's just not time to ask the parties to file any written rebuttal that they may have.

MS. POOLE: Okay.

MR. GRATTAN: I look at this as a response to some questions which were asked on cross-examination for which there wasn't a witness here.

HEARING OFFICER FAY: Right. Okay. Any other further questions?

Okay, and we will be issuing a notice regarding just when the hearings will be. The staff has its filing dates now. And the other parties will be notified by notice.

We are adjourned.

(Whereupon, at 2:45 p.m., the hearing was adjourned.)

CERTIFICATE OF REPORTER

I, DEBI BAKER, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Hearing; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said hearing, nor in any way interested in the outcome of said hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 13th day of December, 1999.

DEBI BAKER

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